The 2015 AAVSO Eclipsing Binary Ephemeris

The AAVSO Eclipsing Binary Ephemeris provides the predicted time of mid-eclipse for eclipsing binaries in the AAVSO Eclipsing Binary observing program. These times appear in Universal Time in the body of the ephemeris table. The time is rounded to the nearest half hour, which provides sufficient accuracy to plan an observing session while, hopefully, leaving sufficient doubt about the exact time in order to eliminate anticipatory bias. The ephemeris is designed for use by observers at American longitudes.

The top rows of the ephemeris table list the name of the eclipsing binary. Directly below the star's name are its approximate maximum and minimum magnitudes. These magnitudes are taken from the 4th edition of the GCVS and may be visual, photographic, or V.

Below that, in the row labeled "DUR", the approximate number of hours required to obtain a time of minimum. This time is typically shorter than the duration of the eclipse listed in the GCVS. We need good coverage of the steep portion of the descending leg through the corresponding portion of the ascending leg of the eclipse to measure the time of mid-eclipse accurately.

The next row, labeled “TOT” indicates the duration of the totality at minimum in hours.

The numbers in the left-most column are the "double date" - the evening and the following morning - for the event times listed in the corresponding row. For example, 5-6 corresponds to the evening of the 5th and the morning of the 6th of the month. January 0-1 is the evening of December 31 and the morning of January 1.

The 'S' in the table heading stands for secondary eclipse. All other predictions are for the primary eclipse. Sometimes a secondary eclipse column may appear where there is no primary eclipse column for a star; this occurs when none of the primary eclipses for that star during that month are observable.

Gerard Samolyk, AAVSO Eclipsing Binary Section

REFERENCE

Kholopov, P. N., *et al.* 1985, *General Catalogue of Variable Stars*, Fourth Edition, Moscow.

AAVSO Eclipsing Binary Ephemeris for January 2015 all times in U.T.

	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	DS AND	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.8	10.7	10.3	9.3	9.2	9.2	10.6	9.0	10.1	10.1	5.7
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	11.4	12.0	11.2	11.2	10.1	10.1	12.3	10.4	11.1	11.1	6.4
DUR	3	11	8	4	3	3	3	4	4	3	4	4	4	3	3	7	3	3	4	4	3	3	5
TOT		2																					
							(S)		(S)				(S)					(S)				(S)	
0- 1	2.5					1.5	5.5		3.5		5.0	6.5			3.0					1.0	5.5	0.5	
1- 2	8.5	0.5	3.5	8.0		1.5	5.5		3.5	7.0		6.5		0.0							1.0	6.0	
2- 3				0.5	5.5	1.0	5.0		3.0	5.5	0.5	7.0		2.5		0.0					6.0	1.5	
3- 4	6.0					1.0	5.0		2.5	3.5	6.0	7.0									1.5	6.5	3.5
4- 5	12.0		3.0	3.0		1.0	5.0		2.5	2.0		7.5									7.0	2.0	
5- 6	3.5	3.5				1.0	5.0		2.0	0.0	2.0	7.5									2.5	7.0	
6- 7	9.5			5.0	7.0	1.0	5.0		1.5		7.0	8.0		0.0							7.5	2.5	
7- 8	0.5		2.5			0.5	4.5		1.5	7.5		8.0		3.0	0.5				12.5		3.0	8.0	
8- 9	6.5			7.0		0.5	4.5	13.0	1.0	6.0	3.0	8.5					12.0					3.5	5.0
9-10	13.0	6.0			0.5	0.5	4.5	12.5	0.5	4.0	8.5	8.5					0.5				4.0		
10-11	4.0		1.5		9.0	0.5	4.5	12.0	0.5	2.5		9.0					0.5			0.0		4.0	
11-12	10.0			1.5		0.5	4.0		0.0	0.5	4.5	9.0		0.0			1.0				4.5		
12-13	1.5					0.0	4.0				9.5			3.0								5.0	
13-14	7.5		1.0	4.0	2.0	0.0	4.0			8.0	0.5				1.5						5.0	0.5	6.0
14-15							4.0			6.5	5.5										0.5	5.5	
15-16	5.0			6.0			4.0			4.5										13.0	6.0	1.0	
16-17	11.0		0.5				3.5			2.5	1.5			0.5							1.5	6.5	
17-18	2.0			8.0	4.0		3.5			1.0	7.0			3.0							6.5	2.0	
18-19	8.5			0.5			3.5														2.0	7.0	7.0
19-20							3.5			8.5	2.5				2.5						7.5	2.5	
20-21	5.5			3.0			3.5			6.5	8.0										3.0	7.5	
21-22	11.5				5.5		3.0	8.5		5.0				0.5							8.0	3.0	
22-23	3.0			5.0			3.0	8.0		3.0	4.0			3.0							3.5		
23-24	9.0						3.0	8.0		1.5	9.0		0.0									4.0	8.5
24-25	0.0			7.0			3.0	7.5					0.5								4.5		
25-26	6.5				7.5		3.0	7.0			5.0		0.5									4.5	
26-27	12.5						2.5	7.0		7.0			1.0	0.5	0.0						5.0	0.0	
27-28	3.5			1.5			2.5	6.5		5.5	1.0		1.0	3.0				0.0			0.5	5.5	
28-29	10.0				0.5		2.5	6.0		3.5	6.5		1.5					0.5			5.5	1.0	9.5
29-30	1.0			4.0	9.0	6.5	2.5	6.0		2.0			1.5					0.5			1.0	6.0	
30-31	7.0					6.5	2.5	5.5		0.0	2.5		2.0					1.0			6.5	1.5	

	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA
MAX	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4
MIN	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9
DUR	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4	5
TOT	(S)		(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)		
0- 1		0.0	7.0						4.0	10.0	6.0	12.0	8.0	12.0	8.5					7.0			
1- 2		3.5	10.5	5.0		5.5	4.0			9.5	5.5	11.0	7.0	9.5	6.0			4.0		1.5	10.5		1.0
2- 3		7.0				11.5	8.5	7.5		8.5	12.5	9.5	6.0	7.0	10.5			8.0	2.0		5.0	3.5	8.0
3- 4		10.0	3.5		7.0				0.5	8.0	12.0	8.5	12.5	11.5	8.0			12.5	10.0	8.5		6.5	
4- 5	10.0		6.5				3.0		10.5	7.5	11.5	7.5	11.0	9.0	5.5	10.5	7.5	3.0		2.5	12.0	10.0	
5- 6		3.0	10.0	8.5			7.5	3.5		7.0	10.5	6.0	10.0	6.5	10.0			7.5			6.0		
6- 7		6.5				5.0	12.0			6.0	10.0	12.5	9.0	11.0	7.5			12.0	1.5	9.5	0.5		5.0
7- 8		10.0	3.0		10.0	11.0	2.0		7.0	5.5	9.5	11.5	7.5	8.0	12.0			2.0	9.5	4.0			
8- 9			6.5				6.5			12.5	8.5	10.0	6.5	5.5	9.0			6.5			7.5		
9-10	11.0	3.0	9.5	11.5			11.0	10.0		12.0	8.0	9.0	13.0	10.0	6.5	10.5		11.0		11.0	2.0		
10-11		6.0	13.0				1.0		3.0	11.5	7.5	8.0	11.5	7.5	11.0			1.5	1.5	5.5		2.0	2.5
11-12		9.5	2.5			4.5	5.5			10.5	7.0	6.5	10.5	12.0	8.5			5.5	9.5		9.0	5.5	9.5
12-13		13.0	6.0			10.5	9.5	6.5		10.0	6.0		9.5	9.5	6.0			10.0		12.5	3.0	8.5	
13-14		2.5	9.5							9.5	5.5	12.0	8.0	7.0	10.5			0.5		6.5			
14-15	12.5	6.0	12.5				4.0		9.5	8.5	12.5	11.0	7.0	11.5	8.0	10.0	5.5	5.0	1.0	1.0	10.0		
15-16		9.0	2.5				8.5	2.5		8.0	12.0	9.5	6.0	9.0	5.0			9.5	9.0		4.5		6.5
16-17		12.5	5.5			4.0				7.5	11.5	8.5	12.5	6.0	10.0					8.0			
17-18	1.0	2.0	9.0			10.0	3.0		6.0	6.5	10.5	7.5	11.0	10.5	7.0		12.5	4.0		2.5	11.5		
18-19		5.5	12.5				7.5			6.0	10.0	6.0	10.0	8.0	11.5			8.5	0.5		6.0	1.0	
19-20		9.0	2.0				12.0	9.0		5.5	9.5	12.5	9.0	5.5	9.0	10.0			8.5	9.5	0.5	4.5	3.5
20-21		12.0	5.5				2.0		2.0	12.5	8.5	11.5	7.5	10.0	6.5			3.0		4.0	13.0	7.5	
21-22		2.0	8.5			3.5	6.5			12.0	8.0	10.5	6.5	7.5	11.0			7.5			7.5	11.0	
22-23	2.0	5.0	12.0			9.5	11.0	5.5		11.5	7.5	9.0	13.0	12.0	8.5			12.0	0.5	11.0	1.5		
23-24		8.5	1.5				1.0			10.5	6.5	8.0	12.0	9.5	6.0			2.5	8.0	5.0			1.0
24-25		12.0	5.0				5.5		8.5	10.0	6.0	7.0	10.5	6.5	10.5	9.5	3.5	7.0			8.5		8.0
25-26		1.5	8.5				9.5	1.5		9.5	5.5	5.5	9.5	11.5	7.5			11.5		12.0	3.0		
26-27		5.0	11.5	0.5		3.0		12.0		8.5	12.5	12.0	8.5	8.5	12.0			1.5		6.5			
27-28	3.5	8.0	1.5			8.5	4.5		5.0	8.0	12.0	11.0	7.0	6.0	9.5		10.5	6.0	8.0	1.0	10.0	3.0	
28-29		11.5	4.5		2.0		8.5			7.5	11.0	9.5	6.0	10.5	7.0			10.5			4.5	6.5	5.0
29-30		1.0	8.0					8.0		6.5	10.5	8.5	12.5	8.0	11.5	9.5		0.5		8.0		9.5	
30-31		4.5	11.5	4.0			3.0		1.5	6.0	10.0	7.5	11.0	5.5	9.0			5.0		2.0	11.5		

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	SX CMA	TU CMA	TZ CMA	TZ CMA	UU CMA	XZ CMI	AK CMI	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	IV CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS
MAX	10.3	9.7	9.8	9.8	10.0	9.7	10.1	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.2	11.3	11.4	10.0	11.2	11.2	10.1
MIN	11.4	10.7	10.5	10.5	12.5	10.2	11.5	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	12.5	11.9	12.4	10.6	11.7	11.7	10.9
DUR	4	4	4	4	5	3	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	4	5
TOT				(S)									(S)									(S)	
0- 1				1.0		13.0	8.5					4.0	0.0	13.0	11.5		2.5		6.0				
1- 2						2.5	12.0		2.5			3.0	6.5	8.0	4.0		2.0		12.0	9.0		8.5	3.5
2- 3						6.5	1.5		7.0	11.0	6.0	2.0	5.5	2.5	12.5		2.0	2.5			3.0		
3- 4	5.5	3.5				10.0	4.5		12.0			1.0	4.5		5.0	11.0	2.0	6.0		3.0			
4- 5		6.5					7.5			6.5		7.5	3.5	11.0			2.0	10.0					2.5
5- 6		9.5				4.0	11.0					6.5	2.5	6.0	6.0	7.5	2.0		5.5		5.5		
6- 7					2.5	7.5	0.5	0.0		2.0	8.5	5.5	1.5	1.0			2.0		11.5				
7- 8						11.5	3.5		2.0			4.5	0.5		7.0	3.5	2.0						1.0
8- 9	2.5				6.5	1.5	7.0		6.5			3.5	7.0	9.5			2.0			9.0	7.5		12.5
9-10						5.0	10.0		11.0		2.0	2.0	6.0	4.0	8.0		2.0	1.0				2.0	
10-11					10.5	9.0					11.0	1.0	5.0		0.5		2.0	5.0	5.0	3.0			
11-12	8.0	1.0				12.5	2.5			12.5		0.0	4.0	12.5	9.0		2.0	8.5	11.0		9.5		11.0
12-13		4.0				2.5	6.0					7.0	3.0	7.5	1.5		2.0	12.5				4.0	
13-14		7.0	9.0			6.5	9.0		1.5	8.0	4.5	5.5	2.0	2.5	10.0		2.0						
14-15						10.0	12.0		6.0			4.5	1.0		2.5	12.5	2.0						10.0
15-16				8.0			2.0		10.5	3.5		3.5	7.5	11.0	11.0		1.5		5.0	9.0		6.0	
16-17	5.0					4.0	5.0					2.5	6.5	5.5	3.5	8.5	1.5		10.5		0.5		
17-18			4.5			7.5	8.0				7.0	1.5	5.5	0.5	12.0		1.5	3.5		3.5			8.5
18-19						11.5	11.5					0.5	4.5		4.5	5.0	1.5	7.5				8.0	
19-20				3.5	2.5	1.5	1.0		0.5			7.0	3.5	9.0	13.0		1.5	11.5			2.5		
20-21		1.5				5.0	4.0		5.5		0.5	6.0	2.5	4.0	5.5	1.0	1.5		4.5				7.0
21-22	2.0	4.5			6.5	9.0	7.0		10.0		9.5	5.0	1.0				1.5		10.5			10.0	
22-23		7.5				12.5	10.5			9.5		4.0	0.0	12.5	6.5		1.5			9.5	4.5		
23-24					10.5	2.5						3.0	7.0	7.5			1.5						6.0
24-25	8.0					6.5	3.0			5.0	3.0	2.0	5.5	2.0	7.5		1.5	2.5		3.5			
25-26						10.0	6.0		0.0		12.0	1.0	4.5				1.5	6.5	4.0		6.5		
26-27							9.5		5.0	0.5		7.5	3.5	10.5	8.5		1.5	10.0	10.0			1.0	4.5
27-28						4.0	12.5		9.5			6.5	2.5	5.5	0.5	10.0	1.5						
28-29						7.5	2.0				5.5	5.5	1.5	0.5	9.5		1.0				9.0		
29-30	5.0	2.0				11.5	5.5					4.5	0.5		1.5	6.0	1.0			9.5		3.5	3.5
30-31		5.0				1.0	8.5					3.5	7.0	9.0	10.5		1.0		3.5				

	U CEP	SU CEP	WZ CEP	WZ CEP (S)	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM (S)	RZ COM	RZ COM (S)	SS COM	SS COM (S)	CC COM	CC COM (S)	U CRB	RW CRB	W CRV	W CRV (S)	RV CRV	RV CRV (S)
MAX	6.7	8.8	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.0
MIN	9.8	9.8	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.0
DUR	4	4	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4
TOT	2																						
0- 1		2.0	6.5	1.5		3.0		2.0	2.5	6.0	8.5	8.0	12.0	13.0	8.0	8.0	5.5				10.0		8.0
1- 2			2.5	7.5		2.5		6.0	4.5	4.5	7.5	8.5	4.0	8.5		5.0	8.0	10.5	7.0	9.0		11.5	
2- 3			8.5	3.5		2.0		10.0	7.0	9.0	6.5	8.5	4.5		9.5	7.5	5.0				8.5		
3- 4	11.5		4.5	9.5	3.0	2.0			9.0	8.0	5.0	9.0	5.0	10.0	5.0	5.0	7.5		11.5	7.5	12.5		8.0
4- 5			0.5	5.5		1.5	6.0		11.0	6.5	4.0	9.5	5.5	6.0	11.0	7.5	4.5			11.5	7.0	11.0	
5- 6		12.0	6.5	1.5	11.0	1.0			0.0	5.5	8.5	10.0	5.5	11.5	6.5	4.5	7.0			6.0	11.0		
6- 7		9.5	2.5	7.5		1.0			2.5	4.5	7.0	10.0	6.0	7.5	12.5	7.0	4.5		9.5	10.0			7.5
7- 8		7.0	8.5	3.5		0.5	12.5	1.5	4.5	8.5	6.0	10.5	6.5		8.0	4.0	7.0				9.5	11.0	
8- 9	11.0	5.0	4.5	9.5		0.0		5.5	6.5	7.5	4.5	11.0	7.0	9.0		6.5	4.0	8.0		9.0			
9-10		2.5	0.5	5.5			3.5	9.0	8.5	6.5	9.0	11.5	7.0	5.0	10.0	4.0	6.5		7.0	12.5	8.0		7.5
10-11		0.0	7.0	2.0	3.5				11.0	5.0	8.0	11.5	7.5	10.5	5.5	6.5	3.5			7.5	12.0	10.5	
11-12			3.0	8.0						4.0	6.5	12.0	8.0	6.5	11.5	9.0	6.0		11.5	11.5	6.5		
12-13			9.0	4.0	11.5		10.0		2.0	8.5	5.5	4.0	8.5	12.0	7.0	6.0	8.5			6.0	10.5		7.0
13-14	11.0		5.0	10.0					4.0	7.0	4.5	4.5	8.5	8.0	13.0	8.5	6.0			10.0		10.0	
14-15		12.0	1.0	6.0			1.0	0.5	6.5	6.0	9.0	5.0	9.0		8.5	5.5	8.5		9.0		9.0		13.0
15-16		10.0	7.0	2.0				4.5	8.5	4.5	7.5	5.5	9.5	9.5		8.0	5.5			8.5			7.0
16-17		7.5	3.0	8.0				8.5	10.5	9.0	6.5	5.5	10.0	5.5	10.0	5.5	8.0			12.5	7.5	10.0	
17-18		5.0	9.0	4.0	3.5		7.5	12.5	13.0	8.0	5.0	6.0	10.0	11.0	6.0	8.0	5.0		7.0	7.0	11.5		12.5
18-19	10.5	2.5	5.0	0.0					2.0	7.0	4.0	6.5	10.5	7.0	12.0	5.0	7.5			11.0	6.5		
19-20		0.5	1.0	6.0	11.5				4.0	5.5	8.5	7.0	11.0	12.5	7.5	7.5	5.0		11.0		10.0	9.5	
20-21			7.0	2.0					6.0	4.5	7.0	7.0	11.5	8.5		4.5	7.5			9.5			12.5
21-22			3.0	8.5				0.0	8.5	9.0	6.0	7.5	11.5		9.0	7.0	4.5				9.0		
22-23			9.5	4.5			4.5	4.0	10.5	7.5	4.5	8.0	12.0	10.0	5.0	4.5	7.0		9.0	8.0	12.5	9.5	
23-24	10.0	12.5	5.5	0.5				8.0	12.5	6.5	9.0	8.5	4.5	5.5	10.5	7.0	4.0			12.0	7.5		12.0
24-25		10.0	1.5	6.5	4.0			11.5	1.5	5.0	8.0	8.5	4.5	11.5	6.5	4.0	6.5			6.5	11.5		
25-26		8.0	7.5	2.5			11.0		4.0	4.0	7.0	9.0	5.0	7.0	12.0	6.5	4.0			10.5	6.0	9.0	
26-27		5.5	3.5	8.5	12.0				6.0	8.5	5.5	9.5	5.5	13.0	8.0	3.5	6.5				10.0		12.0
27-28		3.0	9.5	4.5			2.0		8.0	7.0	4.5	10.0	6.0	9.0		6.0	9.0		11.0	9.0			
28-29	10.0	0.5	5.5	0.5					10.0	6.0	9.0	10.0	6.0	4.5	9.5	8.5	6.0				8.5	9.0	
29-30			1.5	6.5				3.0	12.5	5.0	7.5	10.5	6.5	10.5	5.5	6.0	8.5			7.5	12.5		11.5
30-31			7.5	2.5			8.5	7.0	1.5	9.5	6.5	11.0	7.0	6.0	11.0	8.5	5.5		8.5	11.5	7.0		

	V	SW	WW	ZZ	AE	BR	CG	DK	KV	V346	V387	V388	V456	V466	V466	V477	V704	W	TY	YY	FZ	Z	RZ
	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DRA	DRA
MAX	9.5	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	9.6	11.0	10.2	10.8	10.0
MIN	10.2	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	10.8	12.0	11.3	13.6	10.9
DUR	4	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	4	4	3	4	3
TOT		2																2					
															(S)								
0- 1	11.0							2.0					2.5									9.0	12.0
1- 2							1.5	0.5			12.0	13.0		2.0									1.0
2- 3											3.5			11.5					0.5				3.5
3- 4	6.5		2.0	11.5		0.5			1.0								3.5					2.0	6.0
4- 5				2.5							1.5	3.0										10.5	8.5
5- 6	9.0				3.5		11.5						10.5								1.5		11.0
6- 7					3.0		2.5																0.0
7- 8	11.5				2.0	0.5		3.5									3.0			1.5		4.0	2.5
8- 9		11.5		12.0	1.5		0.0	2.0					3.0	1.0		11.0						12.5	5.0
9-10				3.5	0.5			0.5			4.5		0.5										7.5
10-11	7.0			9.5			12.5																10.0
11-12				0.5		0.5	4.0				2.5				12.5		3.0			0.5		5.5	12.5
12-13	9.5																	2.0					1.5
13-14		1.0	0.5	13.0			1.5				0.5		11.0										4.0
14-15	12.0			4.0																			6.5
15-16				10.0		0.5		3.5								12.0	3.0					7.5	9.0
16-17				1.0				2.0					3.5								0.5		11.0
17-18	7.5							1.0		3.5	12.5	0.0	1.0		2.0								0.5
18-19							2.5				3.5				11.5							0.5	3.0
19-20	10.0			4.5		0.5											3.0					9.0	5.5
20-21				11.0					2.0		2.0												8.0
21-22	12.5			2.0									11.5						2.0				10.0
22-23	5.0						12.5										13.0					2.0	12.5
23-24						0.5	3.5	3.5				0.5					2.5				1.5	10.5	2.0
24-25	7.5				13.0			2.0							1.0								4.5
25-26				11.5			1.0	1.0					1.5										7.0
26-27	10.5			2.5													13.0					4.0	9.0
27-28						0.5					3.0			12.5			2.5		1.0			12.5	11.5
28-29	13.0									2.5													1.0
29-30	5.5										1.0	0.5	12.0										3.5
30-31				12.0			2.5										12.5			1.5		5.5	6.0

	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC	CM LAC
MAX	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9	8.5
MIN	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3	9.5
DUR	5	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4
TOT	1				1			1			1												
			(S)				(S)										(S)				(S)		
0- 1			11.0			7.0	3.0		5.5		10.5				5.5	7.5	3.5	5.5	7.0	2.0	5.5		
1- 2						6.0	2.0		11.5							7.0	3.0	11.0	8.0	1.0	5.0		
2- 3		2.5				5.0	1.5						12.0		7.0	7.0	3.0		9.0	0.0	4.0		12.5
3- 4					7.0	4.5	0.5	11.5		10.0						6.5	2.5	7.5	10.0		3.0		
4- 5				4.0		3.5	7.5								8.0	6.5	2.5	13.0	11.0	6.0	2.0		3.0
5- 6		8.5		9.0		2.5	6.5		5.0							6.5	2.5	3.5	12.0	5.0	1.0	1.5	
6- 7						2.0	5.5	8.5	10.5						9.5	6.0	2.0	9.0		4.0	0.5	3.5	
7- 8	10.5					1.0	5.0			12.0						6.0	2.0			3.0		5.0	
8- 9						0.0	4.0					11.5		9.0	10.5	5.5	1.5	5.5		2.5	6.0		
9-10						7.0	3.0	5.0			12.0		10.5		3.0	5.5	1.5	11.0	4.0	1.5	5.5		
10-11	6.0		6.0	4.0		6.0	2.0		4.0						11.5	5.5	9.5		5.0	0.5	4.5		
11-12				9.0	2.5	5.0	1.5		10.0						4.0	5.0	9.0	7.0	6.0		3.5		
12-13						4.5	0.5	2.0		10.0					13.0	5.0	9.0	12.5	7.0		2.5		3.5
13-14	1.5		12.0			3.5	7.5								5.5	4.5	8.5	3.5	8.0	5.5	1.5		
14-15						2.5	6.5									4.5	8.5	9.0	9.0	4.5	0.5		
15-16		3.5				2.0	5.5		3.5					12.5	6.5	4.5	8.5		10.0	3.5			
16-17				4.0	8.0	1.0	5.0		9.5	12.0			9.0			4.0	8.0	5.0	11.0	3.0			
17-18				8.5		0.0	4.0								7.5	4.0	8.0	10.5	12.0	2.0	5.5		
18-19		9.5				7.0	3.0									3.5	7.5			1.0	5.0		
19-20						6.0	2.5								9.0	3.5	7.5	7.0		0.0	4.0	1.0	
20-21			1.0			5.5	1.5		3.0							3.5	7.5	12.5			3.0	2.5	4.0
21-22	11.5					4.5	0.5		9.0	10.0					10.0	3.0	7.0	3.0	4.0	6.0	2.0	4.5	
22-23				4.0		3.5	7.5					10.0			2.5	3.0	7.0	8.5	5.0	5.0	1.0		
23-24			7.0	8.5		2.5	6.5								11.5	2.5	6.5		6.0	4.0	0.0		
24-25	7.0				3.5	2.0	5.5							11.0	4.0	2.5	6.5	5.0	7.0	3.0			
25-26						1.0	5.0		2.5	12.0	9.0	12.5			12.5	2.5	6.5	10.5	8.0	2.5	6.0		
26-27						0.0	4.0	10.0	8.0						5.0	2.0	6.0		9.0	1.5	5.0		
27-28	2.0					7.0	3.0									2.0	6.0	6.5	10.0	0.5	4.5		
28-29		4.5		3.5		6.0	2.5						12.5		6.0	2.0	5.5	12.5	11.0		3.5		5.0
29-30				8.5	8.5	5.5	1.5	6.5								1.5	5.5	3.0	12.5		2.5		
30-31						4.5	0.5		1.5	10.0					7.5	1.5	5.5	8.5		5.5	1.5		

	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	T LMI	Z LEP	RR LEP	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON	BO MON	U OPH	SX OPH
MAX	10.5	10.5	9.5	11.4	9.5	10.6	10.2	11.0	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	10.8	5.8	10.5
MIN	11.0	11.0	12.7	12.7	10.2	11.7	12.6	12.5	10.9	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3	12.1	6.5	11.2
DUR	5	5	5	4	3	4	6	4	4	6	7	4	5	5	4	5	5	5	5	4	5	5	5
TOT																		1					
		(S)															(S)						
0- 1							7.5																
1- 2		10.5	12.0	7.5	7.0						9.0	10.0				9.0			1.0	7.5		12.0	
2- 3	5.0				12.0										1.5					1.0	6.5		
3- 4			4.5			3.5	8.0			12.0									2.0				
4- 5		12.5			7.0	5.5						7.0								6.0	11.5		
5- 6	7.0				12.0	7.5													2.5				
6- 7		1.5		8.5		9.5	8.5	9.0	7.5						10.0		5.5			10.5		12.5	
7- 8					7.0	12.0		9.0	5.5			4.0	10.5						3.0	4.0			
8- 9	9.0		5.5		12.0			9.0	3.0		8.5							10.5					
9-10		3.5					9.0	8.5	1.0					1.0					4.0	9.0			
10-11					7.0			8.5				0.5						8.0		2.5			
11-12	11.0			9.5	12.0			8.5				11.0							4.5		4.0		
12-13		5.5					9.5	8.0								3.0		6.0		7.5			
13-14			7.0		7.0			8.0									9.5		5.5	1.0	9.5		
14-15					12.0			8.0				8.0						3.5					
15-16		7.5				3.0	10.0	7.5					0.5		3.0				6.0	5.5			
16-17	2.0			10.5	7.0	5.0		7.5	9.0	11.0								1.0					
17-18					12.0	7.5		7.5	7.0			5.0							6.5	10.5			
18-19		9.5	8.5	3.0		9.5	10.5	7.5	5.0											4.0			
19-20	4.0				7.0	11.5		7.0	3.0						11.5	7.0			7.5				11.0
20-21			1.0		12.0			7.0	1.0			1.5								8.5	1.5		
21-22		11.5		11.5			11.0	7.0				12.0							8.0	2.5			12.5
22-23	6.0				7.0			6.5													7.0		
23-24		0.5	10.0	4.0	12.0			6.5											9.0	7.0			
24-25							11.5	6.5				9.0	11.0				3.5			0.5	12.5		
25-26	8.0		2.5		7.0			6.0											9.5				
26-27		2.5		12.5	12.0			6.0		12.5					0.5	11.0				5.5			
27-28						2.5	12.0	6.0	8.5			6.0						11.5	10.0				
28-29	10.0		11.0	4.5	7.0	5.0		6.0	6.5					13.0						10.0			
29-30		4.5			12.0	7.0		5.5	4.5									9.5	11.0	4.0			
30-31			3.5			9.0	12.5	5.5	2.5			3.0		11.5	9.0	1.0							

	V508 OPH	V839 OPH	1010 OPH	EQ ORI	ER ORI	ER ORI (S)	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI (S)	GU ORI	GU ORI (S)	U PEG	U PEG (S)	TY PEG	AQ PEG	BB PEG	BB PEG (S)	BX PEG	DI PEG	GP PEG	Z PER
MAX	10.1	8.8	6.2	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	9.9
MIN	10.7	9.4	7.0	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0	12.4
DUR	3	3	4	4	3	3	5	3	4	3	3	4	4	3	3	6	12	3	3	3	2	4	6
TOT																	5						2
0- 1				4.0	8.5	3.5	9.0			2.0	6.5	3.5	9.5	4.0									
1- 2			11.0		5.0		8.0	6.5		6.5	2.0	2.5	8.0		2.5			2.0		0.5			
2- 3					1.0	6.0	6.5			2.0	6.5	1.0	6.5	1.0	5.5	4.5		4.0		3.5		5.5	
3- 4			10.5		7.5	2.5	5.5			6.5	2.0	11.0	5.0	4.0					1.5	13.0		5.0	
4- 5					4.0	9.0	4.5	9.0		2.0	6.5	9.5	3.5		2.5				3.5	2.5	2.5	4.0	
5- 6		11.0			0.0	5.5	3.0			6.5	2.0	8.0	2.5	1.0	5.5			1.5				3.5	
6- 7					6.5	1.5	2.0			2.0	6.5	6.5	1.0	4.0				3.5		1.5		3.0	
7- 8	10.5	12.5		4.0	3.0	8.0	0.5			6.5	2.0	5.0	11.0		2.5				1.0			2.5	
8- 9	11.5					4.5				2.0	6.5	3.5	9.5	1.0	5.5				3.0	0.5		2.0	
9-10	12.5				6.0	1.0		0.5		6.5	2.0	2.5	8.0	4.0				1.0		3.5	2.0	1.5	
10-11					2.0	7.5				2.0	6.5	1.0	6.5		2.5			3.0				0.5	
11-12					8.5	3.5			3.0	6.5	2.0	11.0	5.0	1.0	5.5				0.5	2.5		0.0	1.0
12-13					5.0			3.0		2.0	6.5	9.5	3.5	4.0					2.5				
13-14					1.5	6.5				6.5	2.0	8.0	2.5		2.5		0.0	0.0		2.0			
14-15		11.0		3.5	8.0	2.5			6.5	2.0	6.5	6.5	1.0	1.0	5.5			2.0			1.5		2.5
15-16					4.0	9.0		5.5		6.5	2.0	5.0	11.0	4.0						1.0			
16-17		12.0			0.5	5.5				2.0	6.5	4.0	9.5		2.5				2.0	4.0	4.5		
17-18	10.5				7.0	2.0			10.0	6.5	2.0	2.5	8.0	1.0	5.5				4.0	0.0			4.0
18-19	11.5				3.0	8.5		8.0		2.0	6.5	1.0	6.5	4.0				1.5		3.0			
19-20	12.5			9.0		4.5	9.5			6.5	2.0	11.0	5.0		2.5			3.5			1.0		
20-21					6.0	1.0	8.0			2.0	6.5	9.5	4.0	1.0	5.5				1.5	2.0			5.0
21-22				3.0	2.5	7.5	7.0			6.5	2.0	8.0	2.5	4.0					3.5		4.5		
22-23					9.0	4.0	6.0			2.0	6.5	6.5	1.0		2.0			1.0		1.0			
23-24		11.0			5.0	0.0	4.5			6.5	2.0	5.0	11.0	0.5	5.0			3.0					6.5
24-25					1.5	6.5	3.5			2.0	6.5	4.0	9.5	3.5			2.5		1.0	0.5	0.5		
25-26		12.0			8.0	3.0	2.5			6.5	2.0	2.5	8.0		2.0				3.0	3.0			
26-27				9.0	4.5	9.5	1.0	2.0		2.0	6.5	1.0	6.5	0.5	5.0			0.5		13.0	4.0		8.0
27-28	10.5				0.5	5.5	0.0			6.5	2.0	11.0	5.0	3.5				2.5		2.5			
28-29	11.5			2.5	7.0	2.0				2.0	6.5	9.5	4.0		2.0				0.5				
29-30	12.5				3.5	8.5		4.5		6.5	2.0	8.0	2.5	0.5	5.0				2.5	1.5	0.0		9.0
30-31						5.0			0.5	2.0	6.5	6.5	1.0	3.5		0.5							

	RT PER	RV PER	ST PER	XZ PER	BETA PER	Y PSC	UZ PUP	UZ PUP	U SGE	1968 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI
MAX	10.6	10.3	9.7	10.6	2.2	9.0	9.7	9.7	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9
MIN	12.0	12.7	13.2	12.7	3.5	12.0	10.6	10.3	9.1	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0
DUR	4	8	5	4	8	7	4	4	6	4	4	4	4	4	3	2	4	6	5	3	3	4	4
TOT			1						2					1									
								(S)					(S)								(S)		
0- 1		6.0	5.5				5.0						13.0		7.5					4.5	0.5		
1- 2					8.5			9.5							3.5		5.0			5.0	1.0	2.5	
2- 3		5.5						4.5				8.0			9.5	0.0				5.5	1.5	6.5	
3- 4	8.5					4.0	9.0					9.0			5.0	2.0	6.5			6.0	2.0		
4- 5	5.0	4.5		2.0	5.0		4.0			13.0		9.5		8.5	1.0	4.0				6.5	2.5	1.0	
5- 6	1.5			6.0				9.0			12.5	10.5			7.0	5.5	8.5			7.5	3.0	5.0	
6- 7		4.0		9.5				4.0			10.0	11.0			3.0	7.5	1.0			8.0	4.0		
7- 8					2.0		8.5					12.0		3.0	9.0	9.5	10.5			0.5	4.5		
8- 9	11.0	3.5	4.5				3.5					13.0			5.0		3.0			1.0	5.0	3.0	
9-10	7.0							8.0							1.0			0.0	0.0	1.5	5.5	7.0	
10-11	3.5	3.0						3.0					8.0		7.0		5.0			2.0	6.0		
11-12							8.0						9.0		3.0			1.0	1.0	2.5	6.5	1.5	
12-13		2.0		3.5			3.0						9.5		8.5		7.0			3.0	7.5	5.5	8.0
13-14				7.0				7.5			10.5		10.5		4.5			2.0	2.0	3.5	8.0		7.0
14-15	9.5	1.5		11.0				2.5					11.0		0.5		8.5			4.5	0.0		6.5
15-16	6.0						7.0						12.0	10.5	6.5		1.5	3.0	3.0	5.0	1.0	3.5	6.0
16-17	2.5	1.0	3.0				2.5						12.5		2.5	0.0	10.5			5.5	1.5	8.0	5.0
17-18								7.0							8.5	2.0	3.0	4.0	4.5	6.0	2.0		4.5
18-19		0.0					11.5	2.0	12.0			8.0		5.0	4.5	4.0				6.5	2.5	2.0	4.0
19-20	12.0			1.5			6.5					9.0			0.5	6.0	5.0	5.0	5.5	7.0	3.0	6.0	3.0
20-21	8.0			5.0			1.5	11.0			11.5	9.5			6.0	7.5				8.0	3.5		2.5
21-22	4.5		10.0	8.5	10.0			6.5			8.5	10.5			2.0	9.5	7.0	6.5	6.5	0.0	4.5	0.0	2.0
22-23	1.0			12.5		0.0	11.0	1.5				11.0			8.0					0.5	5.0	4.0	1.0
23-24							6.0					12.0			4.0		9.0	7.5	7.5	1.5	5.5		0.5
24-25			2.0		7.0			10.5				12.5			0.0		1.5			2.0	6.0		
25-26	10.5							5.5							6.0		10.5	8.5	8.5	2.5	6.5	2.5	
26-27	7.0						10.5						8.0		2.0		3.5			3.0	7.0	6.5	
27-28	3.5			3.0	3.5		5.5				12.5		9.0		8.0			9.5	9.5	3.5	7.5		
28-29				6.5				10.0			9.5		9.5		4.0		5.0			4.0	0.0	0.5	
29-30			9.0	10.0				5.0					10.5	6.5	9.5				10.5	5.0	0.5	5.0	
30-31					0.5		9.5						11.0		5.5	0.5	7.0			5.5	1.5		

	RV	W	W	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	AG	AH	AH	AK	AW	AW	AZ	AZ	BH	Z	AW
	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VUL	VUL
MAX	11.4	9.1	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8
MIN	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9
DUR	4	3	3	6	3	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5
TOT			(S)			(S)									(S)			(S)		(S)			
0- 1		2.0	6.0		4.0	8.0	8.0	4.5	5.5		9.5	9.0	10.0	10.5	5.5		9.0			10.0			
1- 2	6.0	2.0	6.5	3.0	5.5	1.0	3.0		10.5		11.0			6.0	11.0	9.5	10.5	6.5	7.0	11.5			
2- 3		2.5	6.5		7.0	2.5	7.5	6.0			12.0		8.0	11.0	6.5		12.0	8.0	8.0	12.5	10.0		
3- 4		2.5	6.5		8.5	4.0	2.0			0.0	0.5	12.0		7.0	11.5			9.5	9.5			0.5	1.5
4- 5	6.0	2.5	6.5	4.5	1.5	5.5	6.5	7.5			2.0	9.5	6.5	12.0	7.0		6.5	11.0	10.5	6.5			
5- 6	0.5	2.5	6.5		3.0	7.0	1.5		2.5	7.0	3.0			7.5	12.5		8.0	12.5	12.0	7.5		11.0	
6- 7		2.5	6.5		4.5	0.0	5.5	9.0	8.0		4.0		4.5		8.0		9.5		13.0	9.0	12.5		
7- 8	6.5	2.5	6.5	6.0	6.0	1.5	0.5	1.5			5.5	12.5	11.5	8.5		8.5	11.0	7.0		10.0	8.0		2.5
8- 9	0.5	2.5	6.5		7.5	3.5	5.0	10.5			6.5	10.0			9.0		12.5	8.5	7.0	11.0			
9-10		2.5	6.5		0.5	5.0	9.0	3.0			8.0		9.5	9.5	4.5			9.5	8.0	12.5			12.5
10-11	7.0	2.5	6.5	7.5	2.0	6.5	4.0	12.0	0.0		9.0			5.0	10.0		7.0	11.0	9.5				
11-12	1.0	2.5	6.5		3.5	8.0	8.5	4.5	5.5		10.0	13.0	8.0	10.5	5.5		8.5	12.5	10.5	6.0	10.0		
12-13		2.5	6.5		5.0	1.0	3.5		10.5	5.0	11.5	10.0		6.0	11.0		10.0		11.5	7.5			
13-14	7.5	2.5	6.5	9.0	6.5	2.5	7.5	6.0			12.5	7.5	6.0	11.5	6.5		11.5	7.0	13.0	8.5			
14-15	1.5	2.5	6.5		8.0	4.0	2.5			12.0	1.0			7.0	11.5	12.5	13.0	8.5		10.0			
15-16		2.5	6.5		1.0	5.5	7.0	7.5			2.5		4.5	12.0	7.5			10.0	7.0	11.0	12.0		
16-17	7.5	2.5	6.5	10.5	2.5	7.0	1.5		2.5		3.5	10.5	11.5	8.0	12.5		7.5	11.5	8.0	12.0	7.5		
17-18	1.5	2.5	6.5		4.5	8.5	6.0	9.0	8.0		5.0	8.0			8.0		9.0		9.0				
18-19		2.5	6.5		6.0	1.5	1.0	1.5			6.0		9.5	8.5			10.5	6.0	10.5				
19-20	8.0	2.5	6.5	12.0	7.5	3.0	5.0	10.5		2.5	7.0				9.0		12.0	7.5	11.5	7.5			
20-21	2.0	2.5	6.5		0.5	4.5	0.0	3.0			8.5	11.0	8.0	9.5	4.5	11.5		9.0	12.5	8.5	9.5		0.0
21-22		2.5	6.5		2.0	6.0	4.5	12.0	0.0	9.5	9.5	8.5		5.0	10.0		6.5	10.5		9.5			
22-23	8.5	2.5	6.5		3.5	7.5	8.5	4.5	5.5		11.0		6.0	10.5	5.5		8.0	12.0	6.5	11.0			
23-24	2.5	2.5	6.5		5.0	0.5	3.5		11.0		12.0			6.0	11.0		9.5		8.0	12.0			
24-25		2.5	7.0		6.5	2.0	8.0	6.0			0.5	11.5	4.5	11.5	6.5		11.0	6.5	9.0		11.5		1.0
25-26	8.5	3.0	7.0		8.0	3.5	3.0				2.0	8.5	11.5	7.0	12.0		12.5	8.0	10.0		7.0		
26-27	2.5	3.0	7.0		1.0	5.0	7.0	7.5			3.0			12.5	7.5	11.0		9.5	11.5	7.0			
27-28		3.0	7.0		2.5	7.0	2.0		3.0		4.0		9.5	8.0	12.5		7.0	11.0	12.5	8.5			
28-29	9.0	3.0	7.0		4.0	8.5	6.5	9.0	8.0	7.0	5.5	11.5			8.5		8.5	12.5		9.5			1.5
29-30	3.0	3.0	7.0		5.5	1.5	1.0	1.5			6.5	9.0	8.0	8.5			10.0		6.5	10.5	9.0		
30-31		3.0	7.0		7.0	3.0	5.5	10.5			7.5				9.0		11.0	7.0	7.5	12.0		0.5	

	AX VUL	AY VUL	BE VUL	BO VUL	BS VUL	BT VUL	BU VUL	CD VUL
MAX	11.0	11.0	9.9	10.4	11.0	11.8	10.6	11.5
MIN	12.5	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	5	4	5	4	3	3	3	4
TOT								
0- 1							12.0	
1- 2							2.0	
2- 3								
3- 4								
4- 5								
5- 6					1.0		1.5	0.5
6- 7					0.0			
7- 8								1.5
8- 9				12.5				
9-10							1.0	
10-11								
11-12								
12-13								13.0
13-14			0.5				0.5	
14-15								
15-16					1.0			
16-17					11.5			
17-18							0.0	
18-19								0.0
19-20								
20-21								1.5
21-22						13.0		
22-23							3.0	2.5
23-24		1.5						
24-25				2.0				
25-26					1.0			12.5
26-27				1.0	11.5	2.5	2.5	
27-28								
28-29			13.0					
29-30	12.0					12.5	12.5	
30-31			2.0				2.0	

AAVSO Eclipsing Binary Ephemeris for February 2015 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.7	10.3	9.3	9.2	9.2	10.6	9.0	10.1	10.1	5.7	5.7
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	12.0	11.2	11.2	10.1	10.1	12.3	10.4	11.1	11.1	6.4	6.4
DUR	3	11	8	4	3	3	3	4	4	3	4	4	3	3	7	3	3	4	4	3	3	5	5
TOT		2																					
							(S)		(S)			(S)					(S)				(S)		(S)	
0- 1				6.0			2.0	5.0		9.5	7.5	2.0	0.5					12.0		2.0			
1- 2	4.5				2.0		2.0	5.0				2.5		1.0							2.5		4.5
2- 3	10.5						2.0	4.5		6.0	3.5	2.5								2.5		11.0	
3- 4	1.5			0.5			2.0	4.0		4.0		3.0									3.0		
4- 5	8.0						2.0	4.0		2.0		3.0							11.0	3.5			
5- 6				3.0	4.0		1.5	3.5		0.5	4.5	3.5	0.5								3.5		
6- 7	5.0						1.5	3.5		10.0		3.5								4.0			5.5
7- 8	11.5	3.0		5.0			1.5	3.0			0.5	4.0									4.5		
8- 9	2.5						1.5	2.5		6.0	6.0	4.0								5.0			
9-10	8.5				5.5		1.0	2.5		4.5		4.5			12.5	10.5				0.5	5.0		
10-11							1.0	2.0		2.5	2.0	4.5	1.0			10.5				5.5	0.5	0.5	
11-12	6.0					13.0	1.0	1.5		1.0	7.0	5.0				11.0				1.0	6.0		7.0
12-13	12.0			2.0		13.0	1.0	1.5		10.0		5.0				11.5					1.5		
13-14	3.0				7.5	13.0	1.0	1.0	13.0		3.0	5.5				11.5		10.0		1.5			
14-15	9.5			4.0		12.5	0.5	0.5	12.5	6.5		5.5				12.0					2.0		
15-16	0.5					12.5	0.5	0.5	12.0	5.0		6.0	1.0			12.5			12.5	2.5		2.0	
16-17	6.5			6.0	0.5	12.5	0.5		12.0	3.0	4.5	6.0				12.5					3.0		8.0
17-18	13.0					12.5	0.5		11.5	1.5		6.5				13.0				3.0			
18-19	4.0					4.5	0.5		11.0	10.5	0.0	6.5									3.5		
19-20	10.0		5.0	0.5		4.0	0.0		11.0	9.0	5.5	7.0								4.0			
20-21	1.0				2.0	4.0	0.0		10.5			7.0	1.0	0.5							4.0	3.0	
21-22	7.5			3.0		4.0			10.0	5.5	1.5									4.5			9.5
22-23			4.0			4.0				3.5	6.5									0.0	5.0		
23-24	4.5			5.0		4.0				1.5										5.5	0.5		
24-25	11.0				4.0	3.5				11.0	2.5				11.5			11.5		1.0	5.5		
25-26	2.0		3.5			3.5				9.5			1.0						11.5	6.0	1.0	4.0	
26-27	8.0					3.5														1.5			10.5
27-28						3.5				5.5	4.0						10.0				2.0		

	AP AUR	AP AUR (S)	AR AUR	AR AUR (S)	CL AUR	EP AUR	HP AUR	HP AUR (S)	TU BOO	TU BOO (S)	TY BOO	TY BOO (S)	TZ BOO	TZ BOO (S)	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM (S)	R CMA	RT CMA	SX CMA
MAX	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4	10.3
MIN	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9	11.4
DUR	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4	5	4
TOT																							
0- 1	8.0	1.0			2.5	7.5			5.5	9.5	6.5	10.0	10.0	6.5			9.5	7.5		5.5			
1- 2	11.0	4.5		5.5	8.0		4.5		4.5	8.5	5.0	9.0	7.5	3.5					9.5	0.0		2.0	
2- 3	1.0	7.5				2.0			4.0	8.0	4.0	7.5	4.5	8.5			4.5		3.5	13.0			
3- 4	4.0	11.0	7.0			6.5		7.5	3.5	7.5	10.5	6.5	9.0	5.5	9.5	1.5	9.0			7.0			2.0
4- 5	7.5	0.5					1.0		10.5	6.5	9.0	5.5	6.5	10.0				7.0	10.5	1.5	2.0		
5- 6	10.5	4.0		8.5	2.0	1.0			10.0	6.0	8.0	4.0	4.0	7.5			3.5		5.0		5.0		
6- 7	0.5	7.0			7.5	5.5		4.0	9.5	5.5	7.0	10.5	8.5	5.0		8.5	8.0			8.5	8.5	6.5	8.0
7- 8	3.5	10.5				10.0			8.5	4.5	5.5	9.5	6.0	9.5			12.5		12.0	3.0			
8- 9	7.0	0.0					7.0		8.0	4.0	4.5	8.5	3.5	7.0	9.0		2.5	6.5	6.5				
9-10	10.5	3.5				4.5		0.5	7.5	3.5	11.0	7.0	8.0	4.5			7.0		0.5	10.0			
10-11	0.0	7.0			1.0	8.5			6.5	10.5	10.0	6.0	5.5	9.0			11.5			4.0		3.5	
11-12	3.5	10.0			7.0		3.5		6.0	10.0	8.5	5.0	10.0	6.0			2.0		7.5				5.0
12-13	6.5					3.5			5.5	9.5	7.5	3.5	7.0	3.5			6.5	6.5	2.0	11.0	1.0		
13-14	10.0	3.0				7.5		6.5	4.5	8.5	6.5	10.0	4.5	8.0	9.0		11.0			5.5	4.0		
14-15		6.5							4.0	8.0	5.0	9.0	9.0	5.5			1.0		9.0		7.5	0.5	
15-16	3.0	10.0			0.5	2.0	10.0		3.5	7.5	4.0	8.0	6.5	10.0			5.5		3.5	12.5		8.0	
16-17	6.5				6.5	6.5		3.0	10.5	6.5	10.5	6.5	4.0	7.5		6.5	10.0	6.0		7.0			2.0
17-18	9.5	3.0							10.0	6.0	9.5	5.5	8.5	5.0			0.0		10.5	1.0			
18-19		6.0				1.0	6.5		9.0	5.5	8.0	4.5	6.0	9.5	8.5		4.5		4.5				
19-20	2.5	9.5				5.5			8.5	4.5	7.0	11.0	3.0	7.0			9.0			8.0		5.0	8.0
20-21	6.0				0.0	10.0		9.5	8.0	4.0	6.0	9.5	7.5	4.0				5.5	12.0	2.5			
21-22	9.5	2.5			6.0	0.0	2.5		7.5	3.5	4.5	8.5	5.0	8.5			4.0		6.0		3.0		
22-23		6.0				4.5			6.5	10.5	11.0	7.5	9.5	6.0			8.5		0.5	9.5	6.0		
23-24	2.5	9.0				9.0		6.0	6.0	10.0	10.0	6.0	7.0	3.5	8.5		13.0			4.0		2.0	
24-25	5.5								5.5	9.0	8.5	5.0	4.5	8.0			3.0	5.5	7.5				4.5
25-26	9.0	2.0				3.5	9.0		4.5	8.5	7.5	4.0	9.0	5.5			7.5		2.0	11.0			
26-27	12.5	5.5		1.0	5.5	7.5		2.0	4.0	8.0	6.5	10.0	6.5	10.0		4.5	12.0			5.5			
27-28	2.0	9.0							3.5	7.5	5.0	9.0	4.0	7.5			2.0		9.0				

	TU CMA	TZ CMA	TZ CMA	UU CMA	XZ CMI	AK CMI	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	IV CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP
MAX	9.7	9.8	9.8	10.0	9.7	10.1	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.2	11.3	11.4	10.0	11.2	11.2	10.1	6.7	8.8
MIN	10.7	10.5	10.5	12.5	10.2	11.5	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	12.5	11.9	12.4	10.6	11.7	11.7	10.9	9.8	9.8
DUR	4	4	4	5	3	4	4	4	4	3	3	4	4	5	5	5	4	3	4	4	5	4	4
TOT																						2	
			(S)								(S)									(S)			
0- 1					5.0			11.0		2.5	6.0	3.5	2.5	2.0	1.0	1.5	9.5	3.5					
1- 2				2.5	9.0	1.0	4.0		8.0	1.0	5.0		11.5		1.0	5.0				5.5	2.0		13.0
2- 3						4.5	9.0	6.5		0.0	4.0	12.0	3.5		1.0	9.0						9.5	10.5
3- 4				6.5	2.5	7.5				7.0	3.0	7.0	12.5		1.0	13.0			13.0				8.0
4- 5					6.5			2.0	1.5	6.0	2.0	2.0	4.5		1.0		3.0			7.5	1.0		6.0
5- 6		7.5			10.0	0.5			10.5	4.5	1.0				1.0		9.0	9.5	2.0		12.0		3.5
6- 7						3.5				3.5	7.5	10.5	5.5		1.0								1.0
7- 8	2.5		6.5		3.5	6.5	3.5			2.5	6.5	5.0		11.0	1.0	0.0		3.5				9.0	
8- 9	5.5				7.5	10.0	8.5		4.0	1.5	5.5		6.5		1.0	4.0			4.0		11.0		
9-10		3.0						12.5	12.5	0.5	4.5			7.0	1.0	8.0	2.5						
10-11					1.0	2.5				7.0	3.5	8.5	7.5		1.0	11.5	8.5			11.5			
11-12			2.0		5.0	5.5		8.0		6.0	2.5	3.5	0.0	3.5	0.5				6.0		9.5		11.0
12-13					8.5	9.0			6.5	5.0	1.0		9.0		0.5			9.5		0.5		9.0	8.5
13-14							3.0	3.5		4.0	0.0	12.0	1.0		0.5								6.0
14-15				2.5	2.5	1.5	8.0			3.0	7.0	6.5	10.0		0.5		2.5	3.5	8.0		8.5		3.5
15-16	0.0				6.0	4.5	12.5			2.0	6.0	1.5	2.0		0.5	3.0	8.0			2.5			1.5
16-17	3.0			6.5	10.0	8.0			8.5	1.0	4.5		11.0		0.5	6.5							
17-18	6.0									7.5	3.5	10.0	3.0		0.5	10.5					7.0	8.5	
18-19					3.5	0.5				6.5	2.5	5.0	12.0	12.0	0.5					4.5			
19-20					7.5	4.0	2.5		2.5	5.5	1.5		4.0		0.5		2.0	9.5					
20-21						7.0	7.0	9.5	11.0	4.5	0.5		13.0	8.5	0.5		8.0		12.5		6.0		11.0
21-22					1.0	10.0	12.0			3.5	7.0	8.0	5.0		0.5			3.5		7.0			9.0
22-23					5.0			5.0		2.5	6.0	3.0		4.5	0.5	1.5			1.5			8.0	6.5
23-24					8.5	3.0			5.0	1.5	5.0		6.0		0.5	5.5					4.5		4.0
24-25	0.5					6.0		0.5		0.0	4.0	11.5		0.5	0.5	9.0	1.5						1.5
25-26	3.5				2.5	9.0	2.0			7.0	3.0	6.5	7.0		0.0		7.5		3.5				
26-27	7.0				6.0		6.5			6.0	2.0	1.5			0.0			9.5			3.5		
27-28				2.5	10.0	2.0	11.5		7.0	4.5	1.0		8.0		0.0							8.0	

	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	RV CRV	V CRT	Y CYG
MAX	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.0	9.5	7.0
MIN	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.0	10.2	7.6
DUR	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6
TOT		(S)							(S)		(S)		(S)		(S)				(S)		(S)		
0- 1	3.5	8.5	4.0			11.0	3.5	2.5	5.0	3.0	7.5	12.0	7.0	5.5	3.0			6.5	11.0	8.5		8.0	
1- 2	9.5	4.5					5.5	7.0	4.0	3.5	7.5	7.5	2.5	2.5	5.5	12.0	13.0	10.0	5.5		11.0		
2- 3	6.0	1.0	12.5				8.0	5.5	3.0	4.0	8.0	3.5	8.5	5.0	2.5		6.5	5.0	9.5		5.0	11.0	
3- 4	2.0	7.0					10.0	4.5	7.5	4.5	8.5	9.0	4.5	2.5	5.0			9.0	4.0	8.5		3.5	
4- 5	8.0	3.0			5.5		12.0	3.0	6.0	4.5	9.0	5.0	10.0	5.0	2.0		10.5	12.5	8.0		11.0		
5- 6	4.0	9.0				2.5	1.0	2.0	5.0	5.0	9.0	11.0	6.0	2.0	4.5			7.5	12.0		5.0	6.0	
6- 7	10.0	5.0				6.5	3.5	6.5	3.5	5.5	9.5	6.5	11.5	4.5	2.0			11.5	6.5	8.0			
7- 8	6.0	1.0	4.5		12.0	10.5	5.5	5.5	2.5	6.0	10.0	12.5	7.5	1.5	4.5		8.5	6.0	10.5		10.5	8.5	
8- 9	2.0	7.0					7.5	4.0	7.0	6.0	2.0	8.0	3.0	4.0	7.0	10.0		10.0	5.0		4.5		
9-10	8.0	3.0	12.5		3.0		10.0	3.0	5.5	6.5	2.5	4.0	9.0	6.5	4.0		12.5	4.5	9.0	8.0		11.5	
10-11	4.0	9.0		12.5			12.0	7.5	4.5	7.0	3.0	9.5	4.5	4.0	6.5		6.0	8.5	4.0		10.5	4.0	
11-12	0.0	5.0		12.5			1.0	6.0	3.0	7.5	3.0	5.5	10.5	6.5	3.5			12.5	7.5				
12-13	6.0	1.0		12.0	9.5	2.0	3.0	5.0	2.0	7.5	3.5	11.0	6.0	3.5	6.0		10.5	7.0	11.5	7.5		6.5	
13-14	2.5	7.5		11.5		6.0	5.5	3.5	6.5	8.0	4.0	7.0	12.0	6.0	3.5			11.0	6.5		10.0		13.0
14-15	8.5	3.5	4.5	11.5	0.5	9.5	7.5	2.5	5.5	8.5	4.5	3.0	8.0	3.0	6.0			5.5	10.0			9.0	
15-16	4.5	9.5		11.0			9.5	7.0	4.0	9.0	4.5	8.5	3.5	5.5	3.0	7.5	8.0	9.5	5.0	7.5			
16-17	0.5	5.5	13.0	10.5			11.5	5.5	3.0	9.0	5.0	4.5	9.5	3.0	5.5			4.0	9.0		10.0	12.0	13.0
17-18	6.5	1.5		10.5	7.0		1.0	4.5	7.5	9.5	5.5	10.0	5.0	5.5	2.5		12.5	8.0	12.5			4.5	
18-19	2.5	7.5		10.0			3.0	3.5	6.0	10.0	6.0	6.0	11.0	2.5	5.0		6.0	12.0	7.5	7.0			
19-20	8.5	3.5		9.5		1.0	5.0	2.0	5.0	2.0	6.0	11.5	6.5	5.0	2.5			6.5	11.5		9.5	7.0	13.0
20-21	4.5	9.5		9.5		5.0	7.0	6.5	3.5	2.5	6.5	7.5	12.5	2.0	5.0		10.0	10.5	6.0	13.0			
21-22	0.5	5.5	5.0	9.0		9.0	9.5	5.5	2.5	3.0	7.0	3.0	8.0	4.5	2.0			5.0	10.0	7.0		9.5	
22-23	6.5	1.5		8.5	4.0	13.0	11.5	4.0	7.0	3.5	7.5	9.0	4.0	2.0	4.5	5.0		9.0	4.5		9.5		12.5
23-24	2.5	7.5		8.5			0.5	3.0	6.0	3.5	7.5	5.0	9.5	4.5	1.5		8.0	4.0	8.5	12.5		12.0	
24-25	9.0	3.5		8.0			2.5	7.5	4.5	4.0	8.0	10.5	5.5	7.0	4.0			7.5	12.5	6.5		5.0	
25-26	5.0	10.0		7.5	10.5		5.0	6.0	3.5	4.5	8.5	6.5	11.5	4.0	6.5		12.0	11.5	7.0		9.0		12.5
26-27	1.0	6.0		7.5		0.5	7.0	5.0	2.0	5.0	9.0	12.0	7.0	6.5	4.0		5.5	6.5	11.0	12.5		7.5	
27-28	7.0	2.0		7.0	1.5	4.5	9.0	4.0	6.5	5.0	9.0	8.0	3.0	3.5	6.5			10.5	5.5	6.5			

	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG (S)	V477 CYG	V704 CYG	W DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA
MAX	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	9.6	11.0	10.2	10.8	10.0	7.8	9.9
MIN	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	10.8	12.0	11.3	13.6	10.9	9.5	10.7
DUR	5	5	4	4	4	3	4	5	3	3	3	4	4	4	4	7	4	4	3	4	3	5	5
TOT	2															2						1	
0- 1	8.0				0.0			10.5					0.0		2.5						8.0		10.5
1- 2			9.5		8.0		2.5			11.0			9.5					10.5			10.5		
2- 3			0.5				1.0		12.5		2.0				9.0								
3- 4						12.5	11.0					11.5			12.5					7.5	2.5		
4- 5			13.0		0.0				11.0	1.0					2.5						5.0	12.5	
5- 6					8.0	10.0			2.0												7.0		
6- 7			10.0			1.0					12.5				9.0					0.5	9.5		
7- 8			1.0						0.5	11.5	10.0				12.5					9.0	12.0	7.5	
8- 9			7.5	1.5	0.0										2.0				12.5		1.5		
9-10	11.5			1.0	8.0		2.5														4.0		
10-11				0.0		11.0	1.0					10.5			9.0					2.5	6.0	3.0	5.5
11-12			11.0				11.0		12.0						12.5		12.5			11.0	8.5		
12-13			2.0		0.0								12.5		2.0						11.0		
13-14			8.0		8.0				10.0	12.0											0.5		12.0
14-15	1.5								1.5						9.0					4.0	2.5		
15-16						12.0					10.5			0.5	12.0					12.5	5.0		
16-17			11.5		0.0							0.0			2.0			12.5			7.5		
17-18			2.5		8.0	9.5	2.5	11.5				9.5					11.5				10.0		
18-19		12.5	9.0			0.5	1.0								8.5					5.5	12.5		
19-20							11.0			12.0	0.0		11.5		12.0	13.0			11.5		1.5		
20-21									11.0						2.0			11.5			4.0		0.5
21-22			12.0		8.0																6.5	8.5	
22-23						10.5														7.5	9.0		
23-24			9.5			2.0			0.5		11.0				12.0						11.5		6.5
24-25			0.5											9.5	1.5			10.5			0.5	4.0	
25-26				12.5	8.0		2.5			12.5										0.5	3.0		
26-27			13.0	11.5			1.0						10.5						12.5	9.0	5.5		13.0
27-28				11.0		12.0	11.0		12.5		0.5				12.0		0.0				8.0		

	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC
MAX	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9	8.5	10.5	10.5
MIN	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3	9.5	11.0	11.0
DUR	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5
TOT			1			1			1														
	(S)				(S)										(S)				(S)				(S)
0- 1				3.5			7.5							1.0	5.0		2.0	12.0	0.5		10.0	12.0	
1- 2				3.0		3.5							8.5	1.0	5.0	5.0	3.0	3.5					6.5
2- 3	2.0			2.0	6.0							9.5	1.0	1.0	4.5	10.5	4.0	2.5		0.0	0.5	1.0	
3- 4		3.5		1.0	5.0			12.0	10.5				10.0	0.5	4.5	1.0	5.0	2.0		2.0			
4- 5		8.5		0.0	4.0	0.0	1.0	7.5			11.0		2.0	0.5	4.5	6.5	6.0	1.0	12.5	3.5			8.5
5- 6	8.0				3.0		7.0			8.5			11.0	0.0	4.0		7.0		4.0			3.0	
6- 7			4.0	6.0	2.5								3.5	8.0	4.0	3.0	8.0		3.0				
7- 8				5.5	1.5								12.0	7.5	4.0	8.5	9.0		2.0				10.5
8- 9				4.5	0.5			10.0		11.0			4.5	7.5	3.5		10.5	12.5	1.0		10.5	5.0	
9-10		3.5		3.5			0.5					13.0		7.5	3.5	4.5	11.5	4.0	0.0	12.5			
10-11		8.0		3.0			6.5						6.0	7.0	3.0	10.0		3.0			1.0		12.5
11-12		13.0		2.0	6.0						9.5	8.0		7.0	3.0	1.0		2.0				7.0	
12-13				1.0	5.0			12.0	12.0				7.0	6.5	3.0	6.5	2.0	1.5	13.0				1.5
13-14				0.5	4.0			7.5						6.5	2.5		3.0	0.5	12.0				
14-15					3.5								8.0	6.5	2.5	2.5	4.0		3.5			9.5	
15-16	3.0	3.0		6.5	2.5		5.5						0.5	6.0	2.0	8.0	5.0		2.5				3.5
16-17		8.0		5.5	1.5								9.5	6.0	2.0		6.0		1.5		11.0		
17-18		13.0		4.5	0.5			10.0					2.0	6.0	2.0	4.5	7.0	12.0	0.5	1.0		11.5	
18-19	9.0			3.5		8.0					7.5	11.5	10.5	5.5	1.5	10.0	8.5	3.5		3.0	1.5		5.5
19-20			5.0	3.0					7.5				3.0	5.5	1.5	0.5	9.5	2.5				0.5	
20-21				2.0	6.0		5.0					6.0	12.0	5.0	1.0	6.0	10.5	2.0					
21-22		3.0		1.0	5.0	4.5		12.0					4.0	5.0	1.0			1.0	12.5				7.5
22-23		8.0		0.5	4.0			7.5		9.5				5.0	1.0	2.5			4.0			2.5	
23-24		12.5			3.5						12.5		5.5	4.5	0.5	8.0			3.0	12.0			
24-25				6.5	2.5	1.5								4.5	0.5		2.0		2.0		11.5		9.5
25-26				5.5	1.5		4.5			11.5			6.5	4.0	0.0	4.0	3.0	12.5	1.0			4.5	
26-27				4.5	1.0		10.5	10.0						4.0	0.0	9.5	4.0	4.0	0.0		2.0		
27-28		3.0	0.5	4.0								9.5	8.0	4.0	8.0		5.0	3.0					11.5

AAVSO Eclipsing Binary Ephemeris for February 2015 all times in U.T.

	Y LEO	UU LEO	UV LEO	VZ LEO	T LMI	Z LEP	RR LEP	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	BB MON	BO MON	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH
MAX	9.5	11.4	9.5	10.6	10.2	11.0	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.8	5.8	10.5	10.1	8.8	6.2
MIN	12.7	12.7	10.2	11.7	12.6	12.5	10.9	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.3	12.1	6.5	11.2	10.7	9.4	7.0
DUR	5	4	3	4	6	4	4	6	7	4	5	5	4	5	5	5	4	5	5	5	3	3	4
TOT																1							
															(S)								
0- 1			7.0	11.5		5.5	0.5								7.5	7.0	8.5	4.5					
1- 2			12.0			5.0						10.5					2.0					11.0	
2- 3	12.5	5.5	2.5		13.0	5.0										5.0		10.0	9.0				
3- 4			7.0			5.0				10.0		9.0					7.0				8.0	12.0	12.5
4- 5	5.0		12.0			4.5										2.5	0.5				9.0		
5- 6			2.5			4.5			6.5			8.0									10.0		12.5
6- 7			7.0			4.5				7.0				5.0		0.5	5.0				10.5	9.0	
7- 8		6.5	12.0	0.5		4.5													9.5		11.5		12.0
8- 9			2.5	2.5		4.0	6.0	11.0													12.5	10.0	
9-10	6.5		7.0	4.5		4.0	4.0			4.0							3.5	2.0					11.5
10-11			12.0	7.0		4.0	2.0				11.5		6.5									11.0	
11-12			2.5	9.0		3.5	0.0	8.0							1.5		8.5	7.5					11.0
12-13		7.5	7.0	11.0		3.5				1.0	9.0		10.5				2.0		10.5			12.0	
13-14			12.0			3.5				11.0											8.0		11.0
14-15	8.0		2.5			3.0											6.5				9.0		
15-16			7.0			3.0											0.0				10.0	9.0	10.5
16-17	0.5		12.0			3.0				8.0											10.5		
17-18		8.5	2.5			3.0											5.0		11.0	8.0	11.5	10.0	10.0
18-19			7.0			2.5		12.5							5.5						12.0		
19-20	9.5	1.0	12.0	0.0		2.5	6.0			5.0						8.5				9.5		11.0	9.5
20-21			2.5	2.0		2.5	4.0										3.5	5.0					
21-22	2.0		7.0	4.5		2.0	2.0	9.5								6.5				11.0		12.0	9.5
22-23		9.5	12.0	6.5		2.0				2.0							8.0		12.0				
23-24			2.5	8.5		2.0				12.5			8.0			4.0	1.5			12.5	8.0		9.0
24-25	10.5	1.5	7.0	11.0		1.5								3.5							9.0	9.0	
25-26			12.0	13.0		1.5							12.5			2.0	6.5				9.5		8.5
26-27	3.0		2.5			1.5				9.0											10.5	10.0	
27-28		10.5	7.0			1.0					12.5								12.5		11.5		

	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI	GU ORI	GU ORI	U PEG	U PEG	TY PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	RT PER	ST PER	XZ PER	BETA PER	Y PSC
MAX	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.6	10.6	10.9	9.6	10.2	10.6	9.7	10.6	2.2	9.0
MIN	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	11.2	11.2	11.5	10.8	11.0	12.0	13.2	12.7	3.5	12.0
DUR	4	3	3	5	3	4	3	3	4	4	3	3	6	3	3	3	2	4	4	5	4	8	7
TOT																				1			
			(S)					(S)		(S)		(S)			(S)								
0- 1		6.5	1.0				6.5	2.0	5.0			2.0		2.0		0.5			9.0				
1- 2		2.5			7.0		2.0	6.5	4.0	9.5	0.5			12.5					5.5	0.5			
2- 3			4.0			4.0	6.5	2.0	2.5	8.0			2.5		1.5				2.0				
3- 4		5.5	0.5				2.0	6.5	1.0	6.5		2.0			12.5						0.5		
4- 5	2.5	1.5	7.0				6.5	2.0		5.5	0.5			1.5		12.0					4.5		
5- 6			3.0			7.5	2.0	6.5	9.5	4.0	3.5					1.5	3.0				8.0		
6- 7		4.5					6.5	2.0	8.0	2.5		2.0			1.0	11.5			8.0	7.5			1.5
7- 8		1.0	6.0				2.0	6.5	6.5	1.0	0.5					1.0			4.5				
8- 9		7.5	2.5				6.5	2.0	5.5		3.5			1.0					0.5				
9-10		3.5		7.5	1.0		2.0	6.5	4.0	9.5		2.0											
10-11			5.0	6.5			6.5	2.0	2.5	8.0	0.5				0.5		2.5						
11-12	2.0	6.5	1.5	5.0			2.0	6.5	1.0	6.5	3.5					12.5					2.0		
12-13		3.0		4.0	3.5		6.5	2.0		5.5		2.0		0.5		2.0			6.5		6.0		
13-14			4.0	3.0			2.0	6.5	9.5	4.0	0.5					11.5			3.0		9.5	8.5	
14-15		5.5	0.5	1.5			6.5	2.0	8.0	2.5	3.5				0.0	1.0		3.5		6.0			
15-16		2.0	7.0	0.5	6.0		2.0	6.5	6.5	1.0		2.0					2.0	3.0					
16-17			3.5				6.5	2.0	5.5		0.5				13.0	0.0		2.5				5.5	
17-18		4.5					2.0	6.5	4.0	9.5	3.5			2.0				2.0	9.0				
18-19	1.5	1.0	6.0				6.5	2.0	2.5	8.0		2.0		12.5		12.5		1.5	5.5		0.0		
19-20			2.5				2.0	6.5	1.0	6.5	0.5				1.5			0.5	1.5		3.5	2.5	
20-21		4.0					6.5	2.0		5.5	3.5					12.0	2.0	0.0			7.5		
21-22		0.0	5.5			1.5	2.0	6.5	9.5	4.0		2.0		1.0		1.5							
22-23		6.5	1.5				6.5	2.0	8.0	2.5	0.5					11.0				5.0			
23-24	7.5	3.0					2.0	6.5	7.0	1.0	3.5				1.0	0.5			7.5				
24-25			4.5			5.5	6.5	2.0	5.5			2.0							4.0				
25-26	1.0	6.0	0.5				2.0	6.5	4.0		0.5			0.5		13.0	1.5		0.5				
26-27		2.0	7.0		2.5		6.5	2.0	2.5	8.0	3.0										1.5		
27-28			3.5			9.0	2.0	6.5	1.0	7.0		1.5			0.5	12.0					5.0		

	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TX UMA	TY UMA
MAX	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9	11.4	9.1	9.1	6.8	11.7
MIN	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0	12.5	9.9	9.9	8.9	12.4
DUR	4	4	6	5	4	4	4	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3
TOT			2						1														
		(S)						(S)								(S)					(S)		
0- 1	5.0						5.5	12.0		1.5	2.0				6.0	2.0				3.0	7.0		0.0
1- 2		9.5					6.5	12.5	1.0	7.5	4.0	9.0			6.5	2.5	3.0		3.5	3.0	7.0		1.5
2- 3		4.5					7.0			3.5	6.0	1.5			7.0	3.0				3.0	7.0		3.0
3- 4	9.0						8.0				8.0				7.5	3.5				3.0	7.0		4.5
4- 5	4.0		10.0		12.5	10.0	9.0			5.5		3.5			0.0	4.0	1.0		4.0	3.0	7.0		6.0
5- 6		8.5				7.5	9.5			1.5					0.5	4.5	5.5			3.0	7.0		8.0
6- 7		4.0					10.5			7.5		5.5			1.0	5.5				3.0	7.0		1.0
7- 8	8.5						11.0			3.0					2.0	6.0			4.0	3.0	7.0		2.5
8- 9	3.5				11.0		12.0	5.5				7.5			2.5	6.5	3.5			3.0	7.0		4.0
9-10		8.0					12.5	6.5		5.0					3.0	7.0				3.0	7.0		5.5
10-11		3.0		12.0				7.0		1.0		9.0			3.5	7.5			4.5	3.0	7.0		7.0
11-12	8.0					11.0		8.0		7.0		2.0			4.0		2.0			3.0	7.0		8.5
12-13	3.0					8.0		8.5	3.0	3.0					4.5	0.5	6.0			3.0	7.0		1.5
13-14		7.5			12.5			9.5			0.5	3.5			5.0	1.0			5.0	3.0	7.0	0.0	3.0
14-15		2.5						10.5		5.0	2.5				6.0	1.5				3.0	7.0		4.5
15-16	7.0							11.0		1.0	4.0	5.5			6.5	2.5	4.0			3.0	7.0		6.0
16-17	2.5						5.5	12.0		6.5	6.0				7.0	3.0			5.0	3.0	7.5	2.0	7.5
17-18		7.0			11.5		6.5	12.5		2.5	8.0	7.5			7.5	3.5				3.5	7.5		0.5
18-19		2.0				12.0	7.0					0.0				4.0	2.5	6.0		3.5	7.5		2.0
19-20	6.5					9.0	8.0			4.5		9.5			0.5	4.5		5.5	5.5	3.5	7.5	3.5	3.5
20-21	1.5					6.0	8.5			0.5		2.0			1.0	5.0		4.5		3.5	7.5		5.0
21-22		6.5					9.5			6.5					1.5	6.0	0.5	4.0		3.5	7.5		6.5
22-23		1.5			13.0		10.0			2.5		4.0			2.0	6.5	4.5	3.0	6.0	3.5	7.5	5.0	8.0
23-24	6.0			12.5			11.0		5.0	8.5					3.0	7.0		2.5	0.0	3.5	7.5		1.0
24-25	1.0						12.0	5.5		4.0		5.5			3.5	7.5		2.0		3.5	7.5		2.5
25-26		5.5				12.5	12.5	6.5		0.0			0.0	0.5	4.0		3.0	1.0	6.5	3.5	7.5	6.5	4.5
26-27		0.5			11.5	10.0		7.0		6.0		7.5			4.5	0.5		0.5	0.5	3.5	7.5		6.0
27-28	5.5					7.0		8.0		2.0	0.5	0.0	1.0	1.5	5.0	1.0				3.5	7.5		7.5

	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	VV VIR	AG VIR	AH VIR	AH VIR	AK VIR	AW VIR	AW VIR	AZ VIR	AZ VIR	BH VIR	Z VUL	AW VUL	AX VUL	AY VUL	BE VUL	BO VUL	BS VUL
MAX	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	11.0	9.9	10.4	11.0
MIN	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.5	12.9	11.4	13.3	11.5
DUR	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5	5	4	5	4	3
TOT																							
	(S)									(S)			(S)		(S)								
0- 1	4.5	0.5	3.0			9.0		6.0	9.5	5.0		4.0	8.5	9.0	4.5				12.5				
1- 2	6.0	4.5	12.0	0.0		10.0	12.0	13.0	5.0	10.0	10.0	5.5	10.0	10.0	6.0		11.5						
2- 3	7.5	9.0	4.5	5.5		11.5	9.5	4.5	10.5	5.5		7.0	11.5	11.0	7.0	11.0							
3- 4	0.5	4.0		11.0		12.5	7.0	11.0	6.0	11.0		8.5	4.5	12.5	8.0	7.0		12.5					
4- 5	2.0	8.0	6.0		4.5	1.0		2.5	11.5	6.5		10.0	6.0	5.0	9.5								12.5
5- 6	3.5	3.0				2.5	12.5	9.5	7.0	12.0		11.5	7.5	6.5	10.5								11.0
6- 7	5.0	7.5	7.5		12.0	3.5	10.0		2.5	7.5		4.5	9.0	7.5	11.5		9.0			13.0			10.0
7- 8	6.5	2.5		3.0		4.5	7.0	8.0	8.0	3.0	9.5	6.0	10.5	8.5	4.5	9.0							
8- 9	8.0	6.5	9.0	8.0		6.0			3.5	8.5		7.5	12.0	10.0	5.5								
9-10	1.0	1.5	1.5			7.0	12.5	6.0	9.0	4.0		9.0	5.0	11.0	7.0								
10-11	2.5	6.0	10.5			8.5	10.0	13.0	4.5	9.5		10.5	6.5	12.0	8.0								
11-12	4.0	0.5	3.0		2.0	9.5	7.5	4.5	9.5	5.0		12.0	8.0	5.0	9.0	11.0					12.0		
12-13	5.5	5.0	12.0	0.0		10.5		11.0	5.5	10.0		5.0	9.5	6.0	10.5	6.5							
13-14	7.0	9.5	4.5	5.5	9.5	12.0		2.5	10.5	5.5	8.5	6.5	11.0	7.5	11.5								
14-15	0.0	4.0		11.0		0.5	10.5	9.5	6.0	11.0		8.0	12.5	8.5	4.5			0.0				12.0	12.0
15-16	2.0	8.5	6.0			1.5	8.0		11.5	6.5		9.5	5.5	9.5	5.5	13.0							11.0
16-17	3.5	3.5				3.0		7.5	7.0	12.0		11.0	7.0	11.0	6.5	8.5		10.0				10.5	10.0
17-18	5.0	8.0	7.5			4.0			2.5	7.5		12.5	8.5	12.0	8.0								
18-19	6.5	2.5		3.0		5.5	11.0	6.0	8.0	3.0		5.5	10.0	5.0	9.0								
19-20	8.0	7.0	9.0	8.0		6.5	8.5	13.0	3.5	8.5	8.0	7.0	11.5	6.0	10.0								
20-21	1.0	2.0	1.5		7.0	7.5	5.5	4.0	9.0	4.0	12.5	8.5	4.5	7.0	11.5	10.5		11.0					
21-22	2.5	6.0	10.5			9.0		11.0	4.5	9.5		10.0	6.0	8.5	12.5	6.0				0.0			
22-23	4.0	1.0	3.0			10.0	11.0	2.5	10.0	5.0		11.5	7.0	9.5	5.5								
23-24	5.5	5.5	12.0	0.0		11.5	8.5	9.5	5.5	10.5		4.5	8.5	10.5	6.5					10.0			
24-25	7.0	0.5	4.5	5.5		12.5	6.0		10.5	6.0		6.0	10.0	12.0	7.5	12.5		12.0					12.0
25-26	0.0	4.5		11.0		1.0		7.5	6.5	11.0	7.0	7.5	11.5	4.5	9.0	8.0					11.5		11.0
26-27	1.5	9.0	6.0			2.0	11.5		11.5	6.5	11.5	9.0	4.5	6.0	10.0								10.0
27-28	3.0	4.0			4.5	3.5	9.0	6.0	7.0	12.0		10.5	6.0	7.0	11.0						0.5		

	BT VUL	BU VUL	CD VUL
MAX	11.8	10.6	11.5
MIN	12.5	11.4	12.6
DUR	3	3	4
TOT			
0- 1			
1- 2			
2- 3		12.0	
3- 4			10.0
4- 5			
5- 6			11.0
6- 7	12.5	12.0	
7- 8			12.5
8- 9			
9-10			
10-11		11.5	
11-12		1.0	
12-13			
13-14			
14-15	12.0	11.0	
15-16		0.5	
16-17			10.0
17-18			
18-19		10.5	11.0
19-20		0.0	
20-21			12.0
21-22			
22-23	12.0	10.0	
23-24			
24-25			
25-26			
26-27			
27-28			

AAVSO Eclipsing Binary Ephemeris for March 2015 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	DS AND	RY AQR	CX AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.8	8.8	10.7	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	11.4	10.1	12.0	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1
DUR	3	11	8	4	3	3	3	4	4	3	4	4	4	5	3	7	3	3	7	4	4	3	3
TOT		2																	3				
							(S)		(S)				(S)					(S)					(S)
0- 1	5.5		3.0	2.0	5.5	11.0				4.0							10.5					2.0	
1- 2	11.5					11.0				2.0					12.0		11.0						2.5
2- 3	2.5			4.0		11.0				11.5	5.0						11.0					3.0	
3- 4	9.0		2.0			11.0				9.5							11.5						3.5
4- 5						11.0				8.0	1.0						12.0					3.5	
5- 6	6.0					10.5								12.5			12.0						4.0
6- 7	12.5		1.5			10.5				4.5					12.0		12.5						
7- 8	3.5			0.5	0.5	10.5				2.5	2.0			11.5					12.5		10.5		
8- 9	9.5					2.5				1.0													
9-10	0.5		1.0	3.0		2.5				10.0				11.0						9.5		0.5	
10-11	7.0		12.5	12.0		2.0			4.5	8.5	3.5												1.0
11-12					2.0	2.0			4.0						12.0	11.0						1.5	
12-13	4.0	2.5				2.0			4.0	5.0							8.5						1.5
13-14	10.5		12.0			2.0			3.5	3.0	4.5		12.5				8.5					2.0	
14-15	1.5					2.0			3.0	1.0		0.5					9.0						2.5
15-16	7.5				4.0	1.5			3.0	10.5	0.5	1.0					9.5					2.5	
16-17				2.0	12.5	1.5			2.5	9.0	6.0	1.0			12.0		9.5						3.0
17-18	5.0					1.5			2.0	7.0		1.5					10.0				9.5	3.5	
18-19	11.0			4.0		1.5			2.0		1.5	1.5					10.5				12.0		4.0
19-20	2.0				5.5	1.5			1.5	3.5		2.0					10.5					4.0	
20-21	8.5					1.0			1.0	1.5	12.5	2.0					11.0			11.0			
21-22						1.0			1.0	11.0	3.0	2.5			12.0		11.5						
22-23	5.5					1.0		12.5	0.5	9.0		2.5					11.5						
23-24	12.0			0.5		1.0		12.0		7.5		3.0					12.0						0.5
24-25	3.0	11.5				0.5		11.5			4.0	3.0					12.0		11.5			1.0	
25-26	9.0			3.0		0.5		11.5		4.0		3.5											1.5
26-27				12.0	0.5	0.5	12.5	11.0		2.0		3.5			12.5	10.5						2.0	
27-28	6.5					0.5	12.5	10.5		11.5	5.5	4.0											2.0
28-29							12.5	10.5		9.5		4.0									11.0	2.5	
29-30	3.5						12.0	10.0		8.0	1.5	4.5											3.0
30-31	10.0				2.5		12.0	9.5				4.5										3.5	

	WW AUR	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA
MAX	5.7	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2
MIN	6.4	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8
DUR	5	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4
TOT		(S)		(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)	
0- 1			5.5		2.5			2.0	5.5		2.5	6.5	4.0	8.0	8.5	4.5	8.5		6.5	5.0	3.0	12.5	
1- 2			8.5	2.0				6.5			2.0	6.0	3.0	6.5	5.5	2.0		12.0	11.0			6.5	1.5
2- 3	5.5			5.0		4.0					1.5	5.5	1.5	5.5	3.0	6.5			1.5		10.0	1.0	5.0
3- 4			1.5	8.5			5.0	1.0	1.5		8.5	4.5	8.0	4.5	7.5	4.0			6.0		4.5		
4- 5			5.0		5.5			5.5			8.0	4.0	7.0	3.0	5.0	1.5			10.5	4.5		8.0	
5- 6			8.5	1.5						5.0	7.0	3.5	6.0	2.0	2.5	6.0	8.0		0.5	12.5	11.5	2.5	
6- 7				5.0		7.5					6.5	2.5	4.5	8.5	7.0	3.5			5.0		6.0		
7- 8	6.5		1.5	8.0				4.5	8.0		6.0	2.0	3.5	7.5	4.5	8.0			9.5			9.5	
8- 9			4.5				4.5	9.0		1.0	5.5	1.5	2.5	6.0	1.5	5.5		3.0		4.0		3.5	
9-10			8.0	1.0							4.5	8.5	9.0	5.0	6.5	2.5			4.0	12.0	7.5		0.5
10-11				4.5				3.5	4.5		4.0	8.0	7.5	4.0	3.5	7.0	8.0		8.5		1.5	11.0	4.0
11-12		1.5	1.0	8.0				7.5			3.5	7.0	6.5	2.5	8.0	4.5		10.0				5.0	7.0
12-13	8.0		4.5							7.5	2.5	6.5	5.5	9.0	5.5	2.0			3.5	4.0	8.5		
13-14			7.5	1.0			4.0	2.5	0.5		2.0	6.0	4.0	8.0	3.0	6.5			8.0	11.5	3.0	12.0	
14-15				4.0				6.5			1.5	5.5	3.0	7.0	7.5	4.0			12.5			6.5	
15-16			0.5	7.5						4.0	8.5	4.5	2.0	5.5	5.0	1.5	7.5		2.5		10.0	1.0	
16-17		2.5	4.0					1.0			8.0	4.0	8.5	4.5	2.5	6.0			7.0	3.5	4.5		
17-18	9.0		7.5	0.5				5.5	7.0		7.0	3.5	7.0	3.5	7.0	3.5			11.5	11.5		8.0	
18-19				4.0			3.5				6.5	2.5	6.0	2.0	4.0	8.0		1.0	1.5		11.5	2.0	2.5
19-20				7.0							6.0	2.0	5.0	8.5	1.5	5.0			6.0		5.5		6.0
20-21			3.5	10.5				4.5	3.5		5.5	1.5	3.5	7.5	6.0	2.5	7.5		10.5	3.0		9.0	
21-22		4.0	7.0					9.0			4.5	8.5	2.5	6.0	3.5	7.0		8.0	1.0	11.0		3.5	
22-23			10.5	3.5						6.5	4.0	8.0	9.0	5.0	8.0	4.5			5.5		7.0		
23-24				7.0			3.0	3.5			3.5	7.0	7.5	4.0	5.5	2.0			10.0		1.5	10.5	
24-25			3.5	10.0				8.0			2.5	6.5	6.5	2.5	3.0	6.5				3.0		5.0	
25-26			6.5							3.0	2.0	6.0	5.5	9.0	7.5	4.0	7.5		4.5	10.5	8.5		
26-27		5.0	10.0	3.0				2.5			1.5	5.0	4.0	8.0	5.0	8.5			9.0		2.5	12.0	1.5
27-28				6.5				6.5	6.0		8.5	4.5	3.0	7.0	2.0	5.5						6.0	5.0
28-29			3.0	10.0			2.0				8.0	4.0	2.0	5.5	6.5	3.0			3.5	2.5	10.0	0.5	
29-30			6.5		1.0		8.0	1.5			7.0	3.5	8.5	4.5	4.0	7.5			8.0	10.5	4.0		
30-31			9.5	3.0				5.5	2.5		6.5	2.5	7.0	3.5	1.5	5.0	7.0					7.5	

	RT CMA	SX CMA	TU CMA	TZ CMA	TZ CMA	UU CMA	XZ CMI	AK CMI	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS
MAX	11.4	10.3	9.7	9.8	9.8	10.0	9.7	10.1	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1
MIN	12.9	11.4	10.7	10.5	10.5	12.5	10.2	11.5	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9
DUR	5	4	4	4	4	5	3	4	4	4	4	4	3	3	4	4	5	5	4	3	4	4	5
TOT					(S)									(S)								(S)	
0- 1				6.0				5.0					3.5	7.5	10.0	0.5				3.5	5.5		
1- 2		1.5				6.5	3.5	8.5			11.0		2.5	6.5	4.5	9.0		0.5	1.0				2.0
2- 3					5.0		7.5		12.5			1.0	1.5	5.5		1.5		4.5	7.0				
3- 4								1.0		1.5	6.5	9.5	0.5	4.5		10.0	9.5	8.0					
4- 5	3.5			1.5			1.0	4.0		6.0			7.0	3.5	8.0	2.5		12.0				2.0	0.5
5- 6			1.0				5.0	7.5		11.0	2.0		6.0	2.5	3.0	11.0	5.5			9.5			12.0
6- 7			4.0		0.5		8.5					3.0	5.0	1.5		3.5			0.5		9.5		
7- 8												12.0	4.0	8.0	11.5	12.0	2.0		6.5	3.5		4.0	
8- 9	0.5						2.5	3.5					3.0	7.0	6.0	4.5			12.5				11.0
9-10		4.5					6.0	6.5		1.0			2.0	6.0	1.0			3.0			11.5		
10-11										5.5	12.5	5.5	1.0	4.5		5.5		7.0				6.0	
11-12										10.0			7.5	3.5	9.5			10.5			0.5		9.5
12-13						2.5	3.5	2.5	11.5		8.0		6.5	2.5	4.5	6.5			6.0	9.5			
13-14	4.5						7.5	5.5					5.5	1.5					12.0				
14-15		1.5	1.5			6.5		8.5			3.5	8.0	4.5	0.5		7.5	10.5			3.5	2.5		8.5
15-16			5.0				1.0						3.5	7.0	7.5								
16-17							5.0	1.5		5.0			2.5	6.0	2.5	8.5	7.0	2.0				10.5	
17-18	2.0						8.5	4.5		9.5		1.5	1.5	5.0		1.0		5.5	5.5		5.0		7.0
18-19								7.5				10.5	8.0	4.0	11.0	9.5	3.0	9.5	11.5				
19-20							2.0						7.0	3.0	6.0	2.0				9.5		12.5	
20-21							6.0	0.5					6.0	2.0	0.5	10.5							5.5
21-22								3.5			9.5	4.0	5.0	1.0		3.0				3.5		1.5	
22-23	6.0	4.5						7.0	11.0	4.5			3.5	7.5	9.0	11.5			5.5				
23-24			2.0	4.5			3.5			9.0	5.0		2.5	6.5	4.0	4.0		0.5	11.0				4.5
24-25			5.5				7.0						1.5	5.5				4.5				3.5	
25-26					3.5	2.5		2.5			0.5	6.5	0.5	4.5		5.0	12.0	8.5					
26-27	3.0						1.0	6.0					7.0	3.5	7.5			12.0		9.5	11.0		3.0
27-28		1.5				6.5	4.5						6.0	2.5	2.0	6.0	8.0		5.0			5.5	
28-29							8.5			4.0			5.0	1.5					11.0	3.5			
29-30								2.0		8.5		9.0	4.0	8.0	10.5	7.0	4.5						2.0
30-31							2.0	5.0			11.0		3.0	7.0	5.5								

	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	RV CRV
MAX	6.7	8.8	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.0
MIN	9.8	9.8	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.0
DUR	4	4	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4
TOT	2																						
				(S)							(S)		(S)		(S)		(S)				(S)		(S)
0- 1			3.0	8.0	5.5	6.5		8.5	11.0	2.5	5.5	5.5	1.5	3.5	8.5	1.0	3.5		10.0	5.0	9.5		9.0
1- 2		11.5	9.0	4.0		6.0		12.0		1.5	4.0	6.0	2.0	9.5	4.5	3.5	0.5	3.0	3.5	9.0	4.0	12.0	3.0
2- 3		9.0	5.0	10.0		6.0	8.0		2.5	6.0	3.0	6.5	2.0	5.0	10.0	0.5	3.0			3.5	8.0	6.0	
3- 4		7.0	1.0	6.0		5.5			4.5	4.5	1.5	6.5	2.5	1.0	6.0	3.0	5.5		7.5	7.5	2.5		8.5
4- 5	7.5	4.5	7.0	2.0		5.0			6.5	3.5	0.5	7.0	3.0	7.0	2.0	5.5	3.0			2.0	6.5	12.0	
5- 6		2.0	3.0	8.0		5.0			9.0	2.0	5.0	7.5	3.5	2.5	7.5	2.5	5.5		12.0	6.0	10.5	6.0	
6- 7			9.0	4.0		4.5		3.5	11.0	1.0	4.0	7.5	3.5	8.5	3.5	5.0	2.5		5.5	10.0	5.0		8.5
7- 8			5.0	10.0	5.5	4.0	5.0	7.5		5.5	2.5	8.0	4.0	4.0	9.0	2.5	5.0			4.5	9.0	11.5	
8- 9			1.5	6.5		4.0		11.5	2.0	4.0	1.5	8.5	4.5	10.0	5.0	5.0	2.0		9.5	8.5	4.0	5.5	
9-10	7.0		7.5	2.5		3.5			4.5	3.0	6.0	0.5	5.0	5.5	10.5	2.0	4.5		3.0	3.0	8.0		8.0
10-11		12.0	3.5	8.5		3.0	11.5		6.5	2.0	4.5	1.0	5.0	1.5	6.5	4.5	2.0			7.0	2.5	11.5	
11-12		9.5	9.5	4.5		3.0			8.5	0.5	3.5	1.5	5.5	7.0	2.0	1.5	4.5	11.5	7.5	11.0	6.5	5.0	
12-13		7.0	5.5	0.5		2.5	2.5		11.0	5.0	2.0	2.0	6.0	3.0	8.0	4.0	1.5			5.5	10.5		8.0
13-14		4.5	1.5	6.5		2.0		3.0		4.0	1.0	2.0	6.5	8.5	4.0	1.5	4.0		11.5	9.5	5.0	11.0	
14-15	7.0	2.5	7.5	2.5	6.0	2.0		7.0	2.0	2.5	5.5	2.5	6.5	4.5	9.5	4.0	1.0		5.0	4.0	9.0	5.0	
15-16			3.5	8.5		1.5	9.0	11.0	4.0	1.5	4.5	3.0	7.0	10.5	5.5	1.0	3.5			8.0	3.5		7.5
16-17			9.5	4.5		1.0			6.5	6.0	3.0	3.5	7.5	6.0	1.0	3.5	1.0		9.5	3.0	7.5	11.0	
17-18			5.5	0.5		1.0			8.5	4.5	2.0	3.5	8.0	2.0	7.0	0.5	3.5		3.0	6.5	2.0	4.5	
18-19			1.5	6.5		0.5			10.5	3.5	0.5	4.0	8.0	7.5	2.5	3.0	0.5	9.0		10.5	6.0		7.5
19-20	6.5	12.0	8.0	3.0						2.5	5.0	4.5	8.5	3.5	8.5	5.5	3.0		7.0	5.5	10.0	10.5	
20-21		10.0	4.0	9.0			6.5	2.5	2.0	1.0	4.0	5.0	1.0	9.0	4.0	3.0	5.5			9.0	4.5	4.5	
21-22		7.5	10.0	5.0	6.0			6.5	4.0	5.5	2.5	5.0	1.0	5.0	10.0	5.5	2.5		11.5	4.0	8.5		7.0
22-23		5.0	6.0	1.0				10.0	6.0	4.5	1.5	5.5	1.5	1.0	5.5	2.5	5.0		5.0	8.0	3.0	10.0	
23-24		2.5	2.0	7.0			12.5		8.0	3.0	6.0	6.0	2.0	6.5	1.5	5.0	2.5			2.5	7.0	4.0	
24-25	6.5		8.0	3.0					10.5	2.0	4.5	6.5	2.5	2.5	7.5	2.0	5.0		9.0	6.5	11.0		6.5
25-26			4.0	9.0			3.5		12.5	0.5	3.5	6.5	2.5	8.0	3.0	4.5	2.0	7.0		10.5	5.5	10.0	
26-27			10.0	5.0					1.5	5.0	2.5	7.0	3.0	4.0	9.0	2.0	4.5			5.0	9.5	4.0	
27-28			6.0	1.0				1.5	3.5	4.0	1.0	7.5	3.5	9.5	4.5	4.5	1.5		7.0	9.0	4.0		6.5
28-29		12.5	2.0	7.0	6.5		10.0	5.5	6.0	2.5	5.5	8.0	4.0	5.5	10.5	1.5	4.0			3.5	8.0	9.5	
29-30	6.0	10.0	8.0	3.0				9.5	8.0	1.5	4.5	8.0	4.0	1.0	6.0	4.0	1.5		11.5	7.5	3.0	3.5	12.5
30-31		8.0	4.0	9.5			1.0		10.0	6.0	3.0	0.5	4.5	7.0	2.0	1.0	4.0		4.5	2.0	6.5		6.0

	V CRT	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL
MAX	9.5	7.0	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2
MIN	10.2	7.6	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3
DUR	4	6	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3
TOT			2																2				
																(S)							
0- 1	10.0			11.5	10.0	10.0			9.5									1.5				10.0	
1- 2	3.0					9.5	8.0	9.5				10.5									9.5		
2- 3					7.5	8.5												8.5					10.5
3- 4	5.5	12.5										8.5		11.5	7.5		10.5	11.5					
4- 5			8.5										9.5	9.0				1.5				9.0	
5- 6	8.0				11.0		8.0									9.5							
6- 7		12.5						10.5	12.5	12.0								8.0					
7- 8	10.5				8.0				11.0		12.5				11.5			11.5					
8- 9	3.5							8.0	9.5			11.5						1.5					
9-10		12.5					7.5			8.5													12.0
10-11	6.0			10.5	11.5							9.5	9.5				11.5	8.0		9.5			
11-12								11.5						12.0				11.5				12.5	
12-13	8.5	12.0			9.0									9.5		8.5		1.0					
13-14	1.5		12.0				7.5	9.0						7.0									10.0
14-15	11.0				6.0				12.5						10.5			8.0			12.0		
15-16	4.0	12.0			12.5				11.0									11.5				11.5	
16-17									9.5				10.0					1.0					
17-18	6.5				9.5		7.5					10.5											
18-19		12.0			0.5			10.5			12.0							8.0					
19-20	9.0				7.0							9.0				7.5		11.5				10.5	
20-21	2.0			9.0				8.0						10.0				1.0	9.0		11.0		11.0
21-22		12.0					7.5							7.5	9.5								
22-23	4.5				10.0				12.5				10.5					7.5					
23-24								11.5	11.0							12.0		11.0				10.0	
24-25	7.0	12.0			7.5				9.5			12.0						1.0					
25-26							7.5	9.0															
26-27	9.5									9.0		10.0						7.5			9.5		
27-28	2.5	12.0			11.0													11.0				9.0	12.0
28-29												8.0	10.5	10.5	8.5			0.5					
29-30	5.0				8.0	12.0	7.5				11.0			8.0									
30-31		11.5		8.0		11.0		10.0	12.5							11.0		7.5		12.0			

	Z DRA	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC
MAX	10.8	10.0	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2
MIN	13.6	10.9	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0
DUR	4	3	5	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3
TOT			1				1			1			1										
					(S)				(S)										(S)				(S)
0- 1		10.5			4.0	7.5		3.0					9.0					3.5	7.5	6.0	6.5	2.0	
1- 2	2.5					12.5		2.0								4.5	9.0	3.5	7.5		7.5	1.5	
2- 3	11.0	2.0						1.0			4.0	12.0			11.0		1.5	3.0	7.0	2.0	8.5		12.0
3- 4		4.5			10.5				4.0			7.5					10.5	3.0	7.0	7.5	9.5		11.0
4- 5		7.0							3.5								2.5	3.0	7.0				10.0
5- 6	4.0	9.5		1.5		3.0			2.5									2.5	6.5	4.0			1.5
6- 7		12.0				7.5			1.5								4.0	2.5	6.5			12.0	0.5
7- 8		1.0	9.5			12.5			1.0		3.0	9.5	4.5					2.0	6.0		1.0	11.0	
8- 9		3.5		7.5				4.0				5.5		8.0		8.0	5.0	2.0	6.0	5.5	2.0	10.5	
9-10	6.0	6.0						3.0					10.5		9.5			2.0	6.0		3.0	1.5	
10-11		8.5	4.5					2.0									6.5	1.5	5.5	2.0	4.5	1.0	12.5
11-12		11.0				2.5		1.5				12.0		10.5				1.5	5.5	7.5	5.5		11.5
12-13						7.5	1.5	0.5	4.5		2.5	7.5					7.5	1.0	5.0		6.5		10.5
13-14	7.5	2.5			5.0	12.0			3.5	6.0	8.5							1.0	5.0	3.5	7.5		2.0
14-15		5.0							2.5								8.5	1.0	5.0	9.0	8.5		1.0
15-16		7.5							1.5							11.5	1.0	0.5	4.5			11.5	
16-17	0.5	10.0			11.5				1.0	3.0		9.5	6.0		8.0		10.0	0.5	4.5	5.5		11.0	
17-18	9.5	12.5				2.5		4.0			2.0	5.5				6.5	2.5	8.0	4.0			2.0	
18-19		1.5		2.5		7.5		3.0			8.0		12.5					8.0	4.0	1.5		1.5	
19-20		4.0				12.0		2.0									3.5	8.0	4.0	7.5	1.0		12.0
20-21	2.5	6.5						1.5				12.0						7.5	3.5		2.5		11.0
21-22	11.0	9.0	10.0	9.0				0.5	4.5			7.5					4.5	7.5	3.5	3.5	3.5		10.0
22-23		11.5							3.5		1.5			6.5				7.0	3.5	9.0	4.5		1.5
23-24		0.5				2.5			2.5		7.0				6.5		6.0	7.0	3.0		5.5	12.0	0.5
24-25	4.0	3.0	5.5			7.0			2.0							10.0		7.0	3.0	5.5	6.5	11.0	
25-26		5.5				12.0	2.0		1.0			9.5	7.5	9.0			7.0	6.5	2.5		7.5	10.5	
26-27		8.0			6.0			4.0				5.5				5.0		6.5	2.5	1.5	8.5	1.5	
27-28		10.5	1.0					3.0			0.5						8.5	6.0	2.5	7.0		1.0	12.5
28-29	6.0							2.0			6.5			11.0	11.5		0.5	6.0	2.0				11.5
29-30		2.0			12.5	2.0		1.5				12.0					9.5	6.0	2.0	3.5			10.5
30-31		4.5				7.0		0.5	4.5			7.5			5.0		2.0	5.5	1.5	9.0			2.0

	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	Z LEP	RR LEP	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON	BO MON	U OPH
MAX	10.9	8.5	10.5	10.5	9.5	11.4	9.5	10.6	11.0	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	10.8	5.8
MIN	12.3	9.5	11.0	11.0	12.7	12.7	10.2	11.7	12.5	10.9	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3	12.1	6.5
DUR	4	4	5	5	5	4	3	4	4	4	6	7	4	5	5	4	5	5	5	5	4	5	5
TOT																			1				
				(S)														(S)					
0- 1			6.5				12.0		1.0												4.5		
1- 2				0.5		2.5	2.5		1.0				6.0	9.5								3.0	
2- 3							7.0		1.0														
3- 4			8.5		4.5		12.0		0.5	3.5	11.0			7.0							3.0	8.0	
4- 5	2.0	12.0		3.0		11.5	2.5	2.0	0.5	1.5			3.0										
5- 6							7.0	4.0				5.0											
6- 7			10.5			3.5	12.0	6.5			8.0					5.5					1.5		
7- 8				5.0			2.5	8.5															
8- 9	9.0				6.0		7.0	10.5					10.0		12.5	10.0		4.0			6.0		
9-10	11.0	7.5	12.5				12.0																
10-11				7.0			2.5								11.0							0.5	
11-12			1.5			4.5	7.0						7.0							1.0	4.5		6.5
12-13							12.0					4.5			10.0				8.0			6.0	
13-14				9.0	7.5		2.5			5.0										1.5			
14-15			3.5				7.0			3.0		12.5	4.0		8.5		1.5		5.5		3.0		
15-16							12.0			1.0										2.0			
16-17				11.0		5.5	2.5	1.5			10.0				7.5				3.5				7.0
17-18		8.0	5.5				7.0	4.0					1.0							3.0	1.0		
18-19	1.5				9.0		12.0	6.0					11.5	10.0	6.0				1.0				
19-20							2.5	8.0			7.0					7.0				3.5	6.0		
20-21			7.5		1.0		7.0	10.5						7.5									
21-22				2.0		6.5	12.0					12.0	8.0			11.5	5.5			4.5		3.5	8.0
22-23							2.5														4.5		
23-24	10.5		9.5		10.0		7.0													5.0			
24-25	12.0			4.0			12.0			5.0			5.0										
25-26		9.0			2.5		2.5			3.0										5.5	2.5		
26-27			11.5			7.5	7.5			0.5	11.5							2.0					8.5
27-28				6.0			12.0						2.0							6.5	7.5		
28-29			0.5		11.5		2.5	1.5				11.5	12.5								1.0		
29-30							7.5	3.5			8.5									7.0			
30-31				8.0	4.0		12.0	5.5								4.5					5.5	1.0	

	SX	V508	V839	1010	EQ	ER	ER	ET	FL	FT	FZ	FZ	GU	GU	U	U	TY	AQ	BB	BB	BX	DI	GP
	OPH	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG
MAX	10.5	10.1	8.8	6.2	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2
MIN	11.2	10.7	9.4	7.0	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0
DUR	5	3	3	4	4	3	3	5	3	4	3	3	4	4	3	3	6	12	3	3	3	2	4
TOT																		5					
							(S)					(S)		(S)		(S)				(S)			
0- 1		12.0	11.0			5.0					6.5	2.0		5.5						11.0			
1- 2			6.5	8.0		1.5			5.0		2.0	6.5		4.0	12.0						11.0		
2- 3			12.0				2.5	5.5			6.5	2.0		2.5		1.5			11.0			1.0	
3- 4		6.5	7.5	7.5		4.0		4.5			2.0	6.5	7.0	1.0							10.5		
4- 5		7.0			1.0		5.5	3.5			6.5	2.0	5.5		12.0					10.5			
5- 6		8.0	8.5	7.0			2.0	2.0			2.0	6.5	4.0			1.5	1.0			12.5	9.5		
6- 7		9.0				3.0		1.0			6.5	2.0	2.5								12.5		
7- 8		9.5	10.0	6.5			4.5				2.0	6.5	1.0	7.0	12.0				12.0			0.5	
8- 9		10.5					1.0				6.5	2.0		5.5		1.5					11.5		
9-10		11.5	11.0			2.5					2.0	6.5		4.0				11.5		12.0			
10-11		12.0					3.5				6.5	2.0		2.5	12.0						10.5		
11-12			12.0		0.5	5.0					2.0	6.5	7.0	1.0		1.5			11.5				12.5
12-13			7.5			1.5			1.5		6.5	2.0	5.5								9.5		12.0
13-14		6.5					3.0				2.0	6.5	4.0		12.0					11.5			11.5
14-15		7.0	8.5			4.5					6.5	2.0	2.5			1.5							10.5
15-16		8.0				0.5			4.0	3.0	2.0	6.5	1.0	7.0					11.0		11.5		10.0
16-17		9.0	10.0				2.0				6.5	2.0		5.5									
17-18		9.5				3.5					2.0	6.5		4.0		1.5				11.0	11.0		
18-19		10.5	11.0	12.5			5.0			6.5	6.5	2.0		2.5									
19-20		11.5					1.0				2.0	6.5	7.0	1.0					10.5		10.0		
20-21	7.0	12.0	12.0	12.0		2.5					6.5	2.0	5.5			1.5	12.0						
21-22			7.5				4.0				2.0	6.5	4.0								9.0		
22-23	8.5			11.5		5.5		5.0			6.5	2.0	2.5							12.5	12.0		
23-24		6.5	8.5			1.5		3.5			2.0	6.5	1.0	7.0		1.5							
24-25	10.0	7.0		11.5			3.0	2.5			6.5	2.0		5.5					12.0		11.0		
25-26		8.0	9.5			4.5		1.5			2.0	6.5		4.0									
26-27	11.5	9.0		11.0		1.0			0.5		6.5	2.0		2.5		1.5				11.5	10.0		
27-28		9.5	11.0				2.0				2.0	6.5	7.0	1.5									
28-29		10.5		10.5		3.5					6.5	1.5	5.5						11.5		9.5		
29-30		11.5	12.0				5.0		3.0		1.5	6.5	4.0			1.5					12.0		
30-31		12.0	7.5	10.0	5.5		1.5				6.5	1.5	2.5							11.0		12.5	1.5

	Z PER	RT PER	RV PER	ST PER	XZ PER	BETA PER	Y PSC	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU
MAX	9.9	10.6	10.3	9.7	10.6	2.2	9.0	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3
MIN	12.4	12.0	12.7	13.2	12.7	3.5	12.0	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0
DUR	6	4	8	5	4	8	7	4	4	6	5	4	4	4	4	4	3	2	4	6	5	3	3
TOT	2			1						2						1							
									(S)						(S)								(S)
0- 1					9.0			0.5					4.0		8.5			2.5				5.5	1.5
1- 2		6.5							5.0		10.0				9.5		4.0	4.5	2.0	2.0	2.5		2.0
2- 3		2.5		3.5								10.0		4.0	10.0			6.0					3.0
3- 4								4.5		11.0				5.0	11.0		6.0		4.0	3.0	3.5		3.5
4- 5														5.5	11.5		2.0						4.0
5- 6									4.5				10.5	6.5	12.5				6.0	4.0	4.5		4.5
6- 7					3.0							9.0	8.0	7.0		6.5	3.5					1.0	5.0
7- 8	1.5	5.0			6.5			4.0				12.0	5.0	8.0					7.5	5.0	5.5	1.5	5.5
8- 9		1.5												8.5			5.5					2.0	
9-10									4.0					9.5		1.0	1.5				6.5	2.5	
10-11	2.5			2.5										10.0	4.0				2.0			3.5	
11-12						4.0		3.5				10.5		11.0	5.0		3.5					4.0	
12-13		7.5	7.0										11.5	11.5	5.5				4.0			4.5	
13-14	4.0	3.5			1.0				3.0				8.5	12.5	6.5		5.5	1.0				5.0	1.0
14-15			6.5		4.5	1.0		8.0			10.5		5.5		7.0		1.0	2.5	6.0			5.5	1.5
15-16					8.0			3.0				9.0			8.0			4.5					2.0
16-17	5.5		6.0						7.5			12.0			8.5		3.0		8.0				2.5
17-18									2.5						9.5				0.5				3.0
18-19		6.0	5.0	1.0				7.0						4.0	10.0		5.0						4.0
19-20	7.0	2.5						2.5					12.5	4.5	11.0		1.0		2.5				4.5
20-21			4.5						7.0	8.5		11.0	9.5	5.5	11.5	3.0						1.0	5.0
21-22					2.5				2.0				6.5	6.5	12.5		3.0		4.0			1.5	5.5
22-23			4.0		6.0			6.5						7.0								2.0	
23-24								1.5						8.0			4.5		6.0			2.5	
24-25		5.0	3.0						6.0			9.5		8.5			0.5					3.0	
25-26		1.0							1.5			12.5		9.5					8.0			3.5	
26-27			2.5					6.0						10.0	4.0		2.5		0.5			4.5	
27-28							0.5	1.0			11.0		10.5	11.0	4.5			1.0				5.0	1.0
28-29			2.0						5.5				7.5	11.5	5.5		4.5	3.0	2.5			5.5	1.5
29-30		7.0			4.0				0.5			11.0	4.5	12.5	6.0			4.5					2.0
30-31		3.5	1.5		7.5			5.5		12.0					7.0		6.5		4.5				2.5

	V	X	RV	W	W	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	AG	AH	AH	AK	AW	AW	AZ	AZ	BH
	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR
MAX	10.9	8.9	11.4	9.1	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9
MIN	11.9	12.0	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3
DUR	4	4	4	3	3	6	3	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4
TOT					(S)			(S)									(S)			(S)		(S)	
0- 1	1.0			3.5	7.5	8.0	9.0	4.5	8.0	7.0			4.5	6.5		2.5	7.5		3.5	7.5	8.0	4.0	
1- 2			0.5	3.5	7.5		2.0	6.0	3.0		3.0	11.5	6.0	4.0	4.0	8.0	3.0		5.0	9.0	9.5	5.0	10.0
2- 3				3.5	7.5		3.5	7.5	7.5	8.5	8.0		7.0	12.0	11.0	3.5	8.5		6.5	10.5	10.5	6.5	6.0
3- 4				3.5	7.5	9.5	5.0	0.5	2.0	1.0			8.0	9.5	2.5	9.0	4.0	6.5	8.0	3.5	3.5	7.5	
4- 5	3.5		1.0	3.5	7.5		6.5	2.0	6.5	10.0			9.5	7.0	9.5	4.5	9.5	11.0	9.5	5.0	4.5	8.5	
5- 6				3.5	7.5		8.0	3.5	1.5	2.5			10.5	4.0	0.5	10.0	5.0		2.5	6.5	5.5	10.0	12.0
6- 7				3.5	7.5	11.0	1.0	5.5	5.5	11.5		2.0	12.0	12.5	7.5	5.5	0.5		4.0	8.0	7.0	2.5	8.0
7- 8	1.5		1.5	3.5	7.5		2.5	7.0	0.5	4.0	5.5		0.5	9.5		1.0	6.0		5.5	9.5	8.0	4.0	3.5
8- 9				3.5	7.5		4.0	8.5	5.0		11.0	9.0	1.5	7.0	6.0	6.5	1.5		7.0	2.5	9.0	5.0	
9-10				3.5	7.5	12.5	5.5	1.5	9.0	5.5			3.0	4.5		2.0	7.0	5.5	8.5	4.0	10.5	6.0	
10-11			2.0	3.5	7.5		7.0	3.0	4.0				4.0		4.0	7.5	2.5	10.0	10.0	5.5	3.0	7.5	10.0
11-12	4.0			3.5	8.0		8.5	4.5	8.5	7.0			5.0	10.0	11.0	3.0	7.5		3.0	7.0	4.5	8.5	5.5
12-13				4.0	8.0		1.5	6.0	3.5		3.0		6.5	7.5	2.5	8.0	3.5		4.5	8.5	5.5	9.5	
13-14			2.0	4.0	8.0		3.0	7.5	7.5	8.5	8.0		7.5	5.0	9.0	3.5	8.5		6.0	10.0	6.5	2.5	
14-15	2.0			4.0	8.0		4.5	0.5	2.5	1.0			9.0		0.5	9.0	4.0		7.5	3.0	8.0	3.5	12.0
15-16				4.0	8.0		6.0	2.0	7.0	10.0		6.5	10.0	10.5	7.5	4.5	9.5	4.5	8.5	4.5	9.0	5.0	7.5
16-17			2.5	4.0	8.0		8.0	3.5	1.5	2.5			11.0	8.0		10.0	5.0	9.5	10.0	6.0	10.0	6.0	3.0
17-18				4.0	8.0		1.0	5.0	6.0	11.5			12.5	5.5	6.0	5.5	0.5		3.0	7.5	3.0	7.0	
18-19				4.0	8.0		2.5	6.5	1.0	4.0	5.5		1.0			1.0	6.0		4.5	9.0	4.0	8.5	
19-20			3.0	4.0	8.0		4.0	8.0	5.0		11.0		2.0	11.0	4.0	6.5	1.5		6.0	10.5	5.5	9.5	9.5
20-21				4.0	8.0		5.5	1.0	9.5	5.5			3.5	8.0	11.0	2.0	7.0		7.5	3.5	6.5	10.5	5.0
21-22	2.5			4.0	8.0		7.0	2.5	4.5				4.5	5.5	2.5	7.5	2.5		9.0	5.0	7.5	3.5	
22-23			3.0	4.0	8.0		8.5	4.0	8.5	7.0		4.0	6.0		9.0	3.0	8.0	8.5	10.5	6.5	9.0	4.5	
23-24				4.0	8.0		1.5	5.5	3.5		3.0		7.0	11.0	0.5	8.0	3.5		3.5	8.0	10.0	6.0	11.5
24-25	1.0			4.0	8.0		3.0	7.0	8.0	8.5	8.0	11.5	8.0	8.5	7.5	4.0	8.5		5.0	9.5	3.0	7.0	7.0
25-26			3.5	4.0	8.0		4.5	9.0	3.0	1.0			9.5	6.0		9.0	4.5		6.5	2.5	4.0	8.0	
26-27				4.0	8.0		6.0	2.0	7.0	10.0			10.5		5.5	4.5	9.5		8.0	4.0	5.0	9.5	
27-28		4.0		4.0	8.0		7.5	3.5	2.0	2.5			11.5	11.5	12.5	10.0	5.0		9.5	5.5	6.5	10.5	
28-29	3.0	3.5	4.0	4.0	8.0		0.5	5.0	6.5	11.5				9.0	4.0	5.5	0.5	8.0	2.5	7.0	7.5	3.5	9.0
29-30		2.5		4.0	8.0		2.0	6.5	1.0	4.0	5.5	2.0	1.5	6.5	11.0	1.0	6.0	12.5	4.0	8.5	8.5	4.5	4.5
30-31		2.0		4.0	8.0		3.5	8.0	5.5		11.0		2.5	4.0	2.0	6.5	1.5		5.5	10.0	10.0	5.5	

	Z	AW	AY	BE	BO	BS	BT	BU	CD
	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	7.4	10.8	11.0	9.9	10.4	11.0	11.8	10.6	11.5
MIN	9.2	11.9	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	6	5	4	5	4	3	3	3	4
TOT									
0- 1	11.5	12.5				7.5			
1- 2							8.0		9.5
2- 3							11.5	9.5	
3- 4									11.0
4- 5									
5- 6	9.5	8.5							12.0
6- 7						12.0		9.0	
7- 8			11.5			11.0		12.0	
8- 9				8.0		9.5			
9-10		9.5				8.5	8.0		
10-11	7.0					7.5	11.0	8.5	
11-12				10.5				12.0	
12-13									8.0
13-14		10.0							
14-15								8.0	9.5
15-16								11.5	
16-17						12.0			10.5
17-18		11.0				10.5			
18-19						9.5	11.0		12.0
19-20						8.5		11.0	
20-21									
21-22		12.0			12.5				
22-23									
23-24					11.0			10.5	
24-25			9.0						
25-26		12.5		10.0	10.0				8.0
26-27						11.5	10.5		
27-28	11.5				8.5	10.5		10.0	9.0
28-29				12.5		9.5			
29-30						8.5			10.5
30-31		8.5							

AAVSO Eclipsing Binary Ephemeris for April 2015 all times in U.T.
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	RT AND	TW AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR
MAX	9.3	8.8	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1	5.7	5.7
MIN	10.2	11.0	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1	6.4	6.4
DUR	3	11	4	3	3	3	4	4	3	4	4	3	3	7	3	3	7	4	4	3	3	5	5
TOT		2															3						
						(S)		(S)								(S)					(S)		(S)
0- 1	1.0			11.0	8.0		9.5									8.5	6.0						6.5
1- 2	7.0		2.0		8.0		9.0		2.5	2.5						9.0							
2- 3			11.0		8.0	12.0	8.5									9.0		9.0					
3- 4	4.5				7.5	11.5	8.5		10.0							9.5							
4- 5	10.5					11.5	8.0		8.0	3.5		10.0				9.5						1.0	
5- 6	2.0					11.5	7.5		6.5							10.0							
6- 7	8.0					11.5	7.5									10.5			7.0				
7- 8						11.0	7.0									10.5			10.0		1.5		
8- 9	5.0					11.0	6.5		1.0	10.0			11.5			11.0				1.5			
9-10	11.5		10.0			11.0	6.5		10.5			10.0				11.5					2.0	2.5	
10-11	2.5					11.0			8.5					10.0		11.5	10.0						
11-12	8.5					11.0			7.0	11.5													
12-13						10.5			5.0	2.0					6.5								
13-14	6.0					10.5									6.5			10.5					
14-15						10.5			1.5			10.0			7.0							3.5	
15-16	3.5					10.5			11.0	3.5					7.0			7.0					
16-17	9.5					10.5			9.0						7.5								
17-18			2.0			10.0			7.5						8.0				9.0				
18-19	6.5		11.0	2.5		10.0			5.5						8.0				11.5				
19-20				11.0		10.0						10.0			8.5							5.0	
20-21	4.0					10.0	2.5		2.0						9.0						1.0		
21-22	10.0					10.0	2.5		11.5						9.0					1.5			
22-23	1.5					9.5	2.0		9.5	11.0	10.5				9.5						2.0		
23-24	7.5					9.5	1.5		7.5	1.5	10.5				10.0					2.0			
24-25						9.5	1.5		6.0		11.0	10.0			10.0							6.0	
25-26	5.0		10.0			9.5	1.0				11.0			9.0	10.5								
26-27	11.0	11.0				9.5			2.5	3.0	11.5				11.0			8.5					
27-28	2.0					9.0			11.5		11.5				11.0		9.0		7.5				
28-29	8.0					9.0			10.0						11.5				10.5				
29-30						9.0		11.5	8.0			10.5										7.0	

	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA	SX CMA
MAX	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4	10.3
MIN	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9	11.4
DUR	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4	5	4
TOT		(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)			
0- 1		6.0		2.5					6.0	2.0	6.0	2.0	6.0	2.5		6.0	3.0		11.0	2.0			
1- 2	2.5							5.5	5.0	1.5	5.0	1.0	3.5	7.0			7.5	2.0	5.5				
2- 3	6.0		4.5		1.5	4.5			4.5	8.5	3.5	7.5	8.0	4.5			12.0	10.0		9.0			
3- 4		2.5							4.0	8.0	2.5	6.5	5.5	2.0			2.0			3.5			
4- 5		6.0		6.0				2.0	3.5	7.0	1.5	5.0	2.5	6.5	7.0		6.5		7.0		3.5		4.5
5- 6	2.5					3.5			2.5	6.5	8.0	4.0	7.0	3.5			11.0	1.5	1.0	10.5			
6- 7	5.5						5.0		2.0	6.0	6.5	3.0	4.5	1.0			1.0	9.5		4.5			
7- 8		2.0			1.0				1.5	5.0	5.5	1.5	2.0	5.5			5.5		8.0				
8- 9		5.5				2.5			8.5	4.5	4.5	8.0	6.5	3.0			10.0		2.5	11.5		1.5	
9-10	2.0					7.0	1.5		8.0	4.0	3.0	7.0	4.0	7.5	7.0			1.5		6.0			1.5
10-11	5.5								7.0	3.5	2.0	6.0	1.5	5.0		4.0	5.0	9.0	9.5				
11-12		2.0				1.5		4.5	6.5	2.5	8.5	4.5	6.0	2.5			9.5		4.0				
12-13		5.0				5.5			6.0	2.0	7.0	3.5	3.5	7.0						7.5	2.5		
13-14	1.5	8.5							5.0	1.5	6.0	2.5	8.0	4.5		11.5	4.0	1.0	11.0	1.5			
14-15	5.0							1.0	4.5	8.5	5.0	1.0	5.0	1.5	6.5		8.5	9.0	5.5				
15-16	8.0	1.5				4.5			4.0	8.0	3.5	7.5	2.5	6.0						9.0			
16-17		4.5					4.0		3.0	7.0	2.5	6.5	7.0	3.5			3.0			3.0			
17-18	1.0	8.0							2.5	6.5	1.5	5.0	4.5	1.0			7.5		6.5			3.0	4.0
18-19	4.5				6.0	3.5			2.0	6.0	8.0	4.0	2.0	5.5				8.5	1.0	10.0			
19-20	8.0	1.0							1.5	5.0	6.5	3.0	6.5	3.0	6.5		2.5			4.5			
20-21		4.5							8.5	4.5	5.5	1.5	4.0	7.5		2.0	7.0		8.0		1.5		
21-22	1.0	7.5				2.5		3.5	8.0	4.0	4.5	8.0	1.0	5.0			11.0		2.5	11.5	4.5		
22-23	4.0					7.0			7.0	3.0	3.0	7.0	6.0	2.0			1.5	8.0		6.0			1.0
23-24	7.5				5.5				6.5	2.5	2.0	6.0	3.0	6.5		9.5	6.0		9.5				
24-25		4.0				1.5			6.0	2.0	8.5	4.5	7.5	4.0	6.0		10.5		3.5				
25-26		7.5				5.5			5.0	1.5	7.5	3.5	5.0	1.5						7.0			
26-27	4.0						3.0		4.5	8.5	6.0	2.5	2.5	6.0			5.0	8.0	10.5	1.5			
27-28	7.0								4.0	7.5	5.0	1.0	7.0	3.5			9.5		5.0				
28-29		3.5			5.0	4.5			3.0	7.0	4.0	7.5	4.5	8.0						8.5			
29-30		7.0		1.5					2.5	6.5	2.5	6.5	2.0	5.5	6.0		4.5			3.0	3.5		

	TU CMA	TZ CMA	TZ CMA	UU CMA	XZ CMI	AK CMI	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP
MAX	9.7	9.8	9.8	10.0	9.7	10.1	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1	6.7	8.8
MIN	10.7	10.5	10.5	12.5	10.2	11.5	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9	9.8	9.8
DUR	4	4	4	5	3	4	4	4	4	4	3	3	4	4	5	5	4	3	4	4	5	4	4
TOT																						2	
			(S)									(S)								(S)			
0- 1					6.0						2.0	6.0		8.0		3.5			2.0				5.5
1- 2	3.0						10.0		6.5	2.5	1.0	5.0				7.0	4.5						3.0
2- 3										11.5	7.5	3.5	9.0	9.0		11.0	10.5	9.5		9.5			
3- 4					3.5	4.0		3.0	2.0		6.5	2.5	4.0	1.5					4.0			5.5	
4- 5								8.0			5.5	1.5		10.0				3.5					
5- 6										5.0	4.5	8.5		2.5						11.5	10.5		
6- 7											3.5	7.0	7.0	11.0			4.0						
7- 8				2.5	4.5	3.0					2.5	6.0	2.0	3.5	9.0	2.0	10.0						10.5
8- 9						6.0					1.5	5.0				6.0					9.5	5.5	8.0
9-10								2.5		7.5	8.0	4.0	10.5	4.5	5.5	10.0		10.0	8.5				6.0
10-11	3.5				2.0			7.5	8.0		7.0	3.0	5.5							3.0			3.5
11-12					6.0	2.0	9.0				6.0	2.0		5.5	1.5		3.5	4.0			8.0		1.0
12-13						5.5			3.5	1.0	5.0	1.0					9.5		10.5				
13-14										10.0	4.0	7.5	8.5	6.5								5.0	
14-15					3.5						2.5	6.5	3.5			1.0					7.0		
15-16		3.0				1.0		2.0			1.5	5.5		7.5		5.0							
16-17						4.5		7.0		3.5	8.5	4.5				8.5	3.5	10.0					11.0
17-18			2.0					11.5			7.0	3.5	7.0	8.5			9.0		1.5		5.5		8.5
18-19					4.5						6.0	2.5	1.5		10.5			4.0				4.5	6.0
19-20	4.0								9.5		5.0	1.5		9.5						9.0			3.5
20-21				2.5		3.5				6.0	4.0	8.0	10.0	1.5	6.5				3.5		4.5		1.5
21-22					2.0	6.5	8.5	1.5	5.0		3.0	7.0	5.0	10.5			3.0						
22-23					6.0			6.0			2.0	6.0		2.5	3.0	3.5	8.5			11.0			
23-24								11.0			1.0	5.0		11.5		7.5		10.0			3.0	4.5	
24-25						2.5				8.0	7.5	4.0	8.5	3.5		11.0							
25-26					3.5	5.5					6.5	2.5	3.0					4.0					11.0
26-27											5.5	1.5		4.5			2.5		7.5		2.0		9.0
27-28	1.5							1.0		2.0	4.5	8.5	11.5				8.5			2.0			6.5
28-29						1.5	11.0	5.5	11.0	10.5	3.5	7.0	6.5	6.0								4.0	4.0
29-30					4.5	5.0		10.5			2.5	6.0	1.5		11.5	2.5			9.5				1.5

	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	RV CRV	V CRT	Y CYG
MAX	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.0	9.5	7.0
MIN	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.0	10.2	7.6
DUR	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6
TOT		(S)							(S)		(S)		(S)		(S)				(S)		(S)		
0- 1	10.5	5.5						5.0	2.0	9.0	5.0	3.0	7.5	3.5	1.0			6.0	1.5	9.5		7.5	
1- 2	6.5	1.5					1.5	3.5	6.5	1.0	5.0	8.5	3.5	6.0	3.5	4.5	9.0	10.0	5.5	3.5			
2- 3	2.5	7.5			7.5		3.5	2.5	5.0	1.5	5.5	4.5	9.0	3.5	6.0		2.5	4.5	9.0		6.0		11.5
3- 4	8.5	3.5				1.0	5.5	1.0	4.0	2.0	6.0	10.0	5.0	6.0	3.0			8.5	4.0	9.0		3.0	
4- 5	4.5	9.5	7.0			5.0	8.0	5.5	2.5	2.5	6.5	6.0	11.0	3.0	5.5		7.0	3.0	8.0	3.0			
5- 6	10.5	5.5				9.0	10.0	4.5	1.5	2.5	6.5	1.5	6.5	5.5	3.0			7.0	2.5		5.5	5.5	11.5
6- 7	6.5	1.5						3.0	6.0	3.0	7.0	7.5	2.5	2.5	5.5		11.0	1.5	6.5	9.0			
7- 8	2.5	7.5			4.5		1.0	2.0	5.0	3.5	7.5	3.0	8.0	5.0	2.5		4.5	5.5	1.0	3.0		8.0	
8- 9	8.5	3.5					3.5	6.5	3.5	4.0	8.0	9.0	4.0	2.5	5.0	2.5		9.5	5.0		5.5		11.5
9-10	4.5	9.5					5.5	5.0	2.5	4.0	8.0	4.5	9.5	5.0	2.0		9.0	4.0	9.0	8.5			
10-11	10.5	5.5			11.0		7.5	4.0	1.0	4.5	8.5	10.5	5.5	2.0	4.5		2.0	8.0	3.5	2.5		3.5	
11-12	7.0	2.0	7.0			4.5	9.5	3.0	5.5	5.0	9.0	6.5	1.5	4.5	2.0			3.0	7.5		5.0		11.5
12-13	3.0	8.0			2.0	8.0		1.5	4.5	5.5	1.0	2.0	7.0	1.5	4.5		6.5	6.5	2.0	8.5		6.0	
13-14	9.0	4.0					1.0	6.0	3.0	5.5	1.5	8.0	3.0	4.0	1.5			1.5	6.0	2.5			
14-15	5.0	10.0					3.0	5.0	2.0	6.0	2.0	3.5	8.5	1.5	4.0		11.0	5.5	10.0		5.0	8.5	11.0
15-16	1.0	6.0			8.5		5.0	3.5	6.5	6.5	2.5	9.5	4.5	4.0	1.0		4.5	9.0	4.5	8.0		1.5	
16-17	7.0	2.0					7.5	2.5	5.5	7.0	2.5	5.0	10.0	1.0	3.5			4.0	8.5	2.0			
17-18	3.0	8.0					9.5	1.0	4.0	7.0	3.0	1.0	6.0	3.5	6.0		8.5	8.0	3.0		4.5	4.0	11.0
18-19	9.0	4.0	7.5			3.5	11.5	5.5	3.0	7.5	3.5	6.5	1.5	6.0	3.5	11.0	2.0	2.5	7.0	8.0			
19-20	5.0	10.0				7.5		4.5	1.5	8.0	4.0	2.5	7.5	3.0	6.0			6.5	1.5	2.0		6.5	
20-21	1.0	6.0			6.0	11.5	3.0	3.5	6.0	8.5	4.0	8.0	3.5	5.5	3.0		6.5	1.0	5.5		4.5		11.0
21-22	7.0	2.0					5.0	2.0	5.0	8.5	4.5	4.0	9.0	3.0	5.5			5.0	9.5	7.5		9.0	
22-23	3.5	8.5					7.0	6.5	3.5	9.0	5.0	10.0	5.0	5.5	2.5		10.5	9.0	4.0	1.5	10.0	2.0	
23-24	9.5	4.5					9.5	5.5	2.5	1.0	5.5	5.5	10.5	2.5	5.0		4.0	3.5	8.0		4.0		11.0
24-25	5.5	10.5		11.5			11.5	4.0	1.0	1.5	5.5	1.5	6.5	5.0	2.5			7.5	3.0	7.5		4.5	
25-26	1.5	6.5	7.5	11.5	3.0	3.0		3.0	5.5	2.0	6.0	7.0	2.0	2.0	5.0	8.5	8.5	2.0	6.5	1.5	10.0		
26-27	7.5	2.5		11.0		7.0	2.5	1.5	4.5	2.5	6.5	3.0	8.0	4.5	2.0		2.0	6.0	1.5		4.0	7.0	11.0
27-28	3.5	8.5		10.5		10.5	5.0	6.0	3.5	2.5	7.0	8.5	3.5	2.0	4.5			10.0	5.5	7.0			
28-29	9.5	4.5		10.5	9.5		7.0	5.0	2.0	3.0	7.0	4.5	9.5	4.5	1.5		6.0	4.5	9.5	1.0	9.5		
29-30	5.5	10.5		10.0			9.0	3.5	6.5	3.5	7.5	10.0	5.0	1.5	4.0			8.5	4.0		3.5	2.5	11.0

	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA
MAX	7.0	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8
MIN	7.6	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6
DUR	6	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3	4
TOT		2																2					
	(S)														(S)								
0- 1				5.5	10.5			11.0									11.0				8.0	10.0	
1- 2	6.0			11.5	10.0		7.5	9.5		5.0										8.5			7.5
2- 3					9.0	7.5		8.5			11.0				5.5				9.0				
3- 4				9.0	8.5			7.0				11.0					7.5						
4- 5	5.5				7.5		11.5				9.0	7.5		7.5			11.0				7.5	8.0	
5- 6		8.5		6.0	7.0								11.0			7.5							9.5
6- 7						7.5	9.0				7.5		8.5		10.0								
7- 8	5.5												5.5				7.5			7.5	11.5	11.5	
8- 9				9.5			6.0	11.0									10.5						2.5
9-10			7.0					9.5		10.5		11.5											11.0
10-11	5.5			7.0		7.5		8.5				8.0											
11-12							10.0	7.0			10.5			6.5			7.0				10.5	9.5	
12-13				4.0					10.0							8.5	10.5						4.5
13-14	5.5			10.5			7.5				8.5		11.5		8.5			9.5					
14-15						7.0							9.0							11.0			
15-16				7.5					6.0		6.5	11.5	6.0	11.0			7.0				10.0		
16-17	5.5						11.0	11.0				8.0					10.5						6.0
17-18				5.0				10.0															
18-19				11.0		7.0	8.5	8.5			11.5			5.5								10.5	
19-20	5.0		6.0					7.0								9.5	7.0				9.0		
20-21				8.0			6.0			10.0	9.5				7.5		10.5			10.0			8.0
21-22																							
22-23				5.5		7.0					7.5	8.5	9.5	10.0					11.0			8.5	
23-24				11.5			10.0						6.5				7.0				8.0		1.0
24-25								11.0			6.0						10.0						9.5
25-26				9.0			7.0	10.0											8.0			11.5	
26-27						7.0		8.5								10.0				9.0			
27-28				6.0				7.0			10.5				6.5		6.5				7.5		2.5
28-29		5.5					11.0					9.0					10.0						11.5
29-30			4.5						11.0		9.0			9.0								9.5	

	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC
MAX	10.0	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9
MIN	10.9	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3
DUR	3	5	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4
TOT		1				1			1			1											
				(S)				(S)										(S)				(S)	
0- 1	7.0		3.5		12.0						3.0						5.5	1.5		1.5		8.5	
1- 2	9.5											3.0				3.0	5.0	1.5	5.0	2.5	11.5	8.0	
2- 3	12.0							2.0		6.0					8.5		5.0	1.0		3.5	10.5		
3- 4	1.0		10.0					1.0			9.5	9.0				4.5	5.0		1.5	4.5	10.0		
4- 5	3.5	11.0			2.0						5.5			10.0	3.0		4.5		7.0	5.5	9.0		
5- 6	6.0			1.0	7.0				4.5				5.0			5.5	4.5			6.5	8.0		7.5
6- 7	8.5				11.5		2.5							3.5			4.5		3.0			11.0	9.5
7- 8	10.5	6.5				3.0	1.5			5.5						6.5	4.0					10.0	11.5
8- 9				7.5					1.0		7.5		7.5				4.0	8.0				9.0	
9-10	2.5										3.0				12.0	8.0	3.5	7.5	5.0			8.0	
10-11	5.0	1.5			2.0							4.5					3.5	7.5			11.0	7.5	
11-12	7.5				6.5			2.0					10.0	8.5	6.5		3.5	7.5	1.0		10.5		
12-13	9.5				11.5			1.0		4.5	9.5	11.0				1.5	3.0	7.0	6.5	1.5	9.5		
13-14			4.5								5.5						3.0	7.0		2.5	8.5		
14-15	1.5															3.0	2.5	6.5	3.0	3.5	7.5	11.5	
15-16	4.0						2.5										2.5	6.5		4.5		10.5	
16-17	6.5		11.0		2.0		1.5									4.0	2.5	6.5		5.5		9.5	
17-18	8.5				6.5					4.0	7.5						2.0	6.0	4.5	6.5		8.5	
18-19	11.0	11.5		2.0	11.5						3.0			6.5	10.0	5.0	2.0	6.0			11.5	7.5	
19-20												6.0					1.5	5.5	1.0		10.5		
20-21	3.0							2.0							5.0	6.5	1.5	5.5	6.5		10.0		8.5
21-22	5.5	7.0		8.5				1.0			9.5						1.5	5.5			9.0		10.5
22-23	7.5				1.5					3.5	5.5		6.0			7.5	1.0	5.0	2.5		8.0		
23-24	10.0				6.5									11.5			1.0	5.0				11.0	
24-25		2.5			11.0		2.5											4.5		1.5		10.0	
25-26	2.0						1.5		5.5				8.5	5.0		1.0		4.5	4.5	2.5		9.0	
26-27	4.5		6.0								7.5							4.5		3.5		8.0	
27-28	6.5									3.0	3.0				8.5	2.5		4.0		4.5	11.0	7.5	
28-29	9.0				1.5				2.5			7.5	10.5				8.0	4.0	6.0	5.5	10.0		
29-30	11.5				6.5			2.0							3.5	3.5	7.5	3.5		7.0	9.5		

	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	T LMI	RR LEP	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	BB MON	BO MON	U OPH	SX OPH	V508 OPH
MAX	8.5	10.5	10.5	9.5	11.4	9.5	10.6	10.2	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.8	5.8	10.5	10.1
MIN	9.5	11.0	11.0	12.7	12.7	10.2	11.7	12.6	10.9	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.3	12.1	6.5	11.2	10.7
DUR	4	5	5	5	4	3	4	6	4	6	7	4	5	5	4	5	5	5	4	5	5	5	3
TOT																		1					
			(S)														(S)						
0- 1		2.5			8.5	2.5	8.0					9.5									9.5		4.5
1- 2						7.5				5.5					9.0					6.5			5.5
2- 3	9.5		10.0								3.0								4.0				6.5
3- 4		4.5				2.5						6.0											7.0
4- 5				5.5		7.5					11.0		10.5					5.0					8.0
5- 6					9.5				2.5										2.5		10.5		9.0
6- 7		6.5				2.5						3.0	8.0					2.5					9.5
7- 8			1.0		1.5	7.5																	10.5
8- 9										10.0			5.5			4.0							11.5
9-10		8.5		7.0		2.5	1.0				2.5												
10-11	10.0		3.0			7.5	3.5					10.5								4.0	11.0		4.5
11-12							5.5			7.0	10.5												5.5
12-13		10.5			2.5	2.5	7.5								6.0								6.5
13-14			5.0			7.5						7.0							4.0				7.0
14-15				8.0						4.0					10.5								8.0
15-16						2.5																	9.0
16-17			7.0			7.5			2.0			4.0		11.5					2.0				9.5
17-18		2.0			3.5																		10.5
18-19	10.5					2.5				11.5	10.0			10.5								4.0	11.5
19-20			9.0	9.5		7.5		1.0				1.0								1.5			
20-21		4.0												9.0			4.0					5.5	4.5
21-22				2.0		2.5				8.5			11.0						5.5				5.5
22-23			11.0		4.5	7.5	3.0	1.5						8.0							5.0	7.0	6.5
23-24	6.0	6.0					5.0					8.5	8.5		3.5								7.0
24-25						2.5	7.5			5.5				6.5					3.5			9.0	8.0
25-26						7.5		2.0			9.5		6.0		8.0			4.0					9.0
26-27	11.0	8.0		3.5								5.0		5.5		2.0						10.5	9.5
27-28			2.0		5.5	2.5			1.5									2.0	2.0		5.5		10.5
28-29						7.5		2.5						4.5									11.0
29-30		10.0										2.0											

	V839 OPH	1010 OPH	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI	GU ORI	GU ORI	U PEG	U PEG	TY PEG	AQ PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	RT PER	ST PER	XZ PER
MAX	8.8	6.2	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	10.6	9.7	10.6
MIN	9.4	7.0	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0	12.0	13.2	12.7
DUR	3	4	3	3	5	3	4	3	3	4	4	3	3	6	12	3	3	3	2	4	4	5	4
TOT															5							1	
				(S)					(S)		(S)		(S)				(S)						
0- 1			2.5					1.5		1.5		12.0				9.0		11.5					
1- 2	8.5	10.0							1.5		5.5		10.0			11.0		7.5					
2- 3								1.5			4.0						8.5	10.5					
3- 4	9.5	9.5	2.0						1.5		2.5	11.5					10.5						
4- 5	5.5			3.5				1.5			1.5		10.0					9.5			6.0		
5- 6	11.0	9.0							1.5	5.5						10.5					2.0		1.5
6- 7	6.5		1.0				4.5	1.5		4.0		11.5						8.5					5.0
7- 8		8.5		2.5					1.5	2.5			10.0				10.0	11.5					
8- 9	7.5							1.5		1.5								7.5			11.5		
9-10		8.5							1.5		5.5	11.5				10.0		10.5	11.5				
10-11	8.5			1.5				1.5			4.0		10.0								4.5		
11-12		8.0	3.0						1.5		2.5						9.5	10.0					
12-13	9.5				3.0	2.0		1.5			1.5	11.5					11.5						
13-14	5.5	7.5			2.0				1.5	5.5			10.0			9.0		9.0					3.0
14-15	10.5		2.0					1.5		4.0						11.0			11.0				6.5
15-16	6.5	7.0		3.5					1.5	3.0		11.5					9.0	8.0					
16-17								1.5		1.5			10.0				11.0	11.0			3.0	4.0	
17-18	7.5	7.0	1.0						1.5		5.5				8.0	8.5		7.0					
18-19				2.5				1.5			4.0	11.5				10.5		10.0					
19-20	8.5	6.5							1.5		3.0		10.0						10.5				
20-21								1.5			1.5			10.0			10.5	9.0					
21-22	9.5	6.0		2.0					1.5	5.5		11.5									5.5	11.0	4.5
22-23	5.0		3.0					1.5		4.0						10.0		8.0		11.5	2.0		
23-24	10.5	5.5							1.5	3.0								11.0		10.5			
24-25	6.5							1.5		1.5		11.5					10.0	7.5	10.5	10.0		3.0	
25-26	11.5	5.5	2.5				2.0		1.5		5.5							10.5		9.5	11.5		
26-27	7.5					1.0		1.5			4.0					9.5				9.0			
27-28		5.0							1.5		3.0	11.5				11.5		9.5		8.5	4.0		
28-29	8.5		1.5				5.5	1.5			1.5				10.0		9.0						2.5
29-30		4.5		3.0		3.5			1.5	5.5							11.5	8.5	10.0				6.0

	BETA PER	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TX UMA
MAX	2.2	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9	11.4	9.1	9.1	6.8
MIN	3.5	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0	12.5	9.9	9.9	8.9
DUR	8	4	4	6	5	4	4	4	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6
TOT				2						1													
			(S)						(S)								(S)					(S)	
0- 1									8.0		2.5						3.0	1.5	1.0		4.0	8.0	
1- 2			5.0			6.5		2.5	8.5				6.0				3.5				4.0	8.0	
2- 3					8.5	9.5		3.0	9.5		4.0										4.0	8.0	
3- 4	2.5	4.5					11.0	4.0	10.0												4.0	8.5	
4- 5							8.0	4.5	11.0							1.5					4.5	8.5	
5- 6			4.5				5.5	5.5	11.5		2.0					2.0				11.0	4.5	8.5	
6- 7				6.0		8.5	2.5	6.0					2.5			2.5					4.5	8.5	2.0
7- 8		4.0				11.5		7.0			4.0					3.0		2.0			4.5	8.5	
8- 9								7.5					4.5			3.5				11.0	4.5	8.5	
9-10			4.0		11.0			8.5	2.5												4.5	8.5	3.5
10-11						7.0		9.5	3.0		1.5	1.0									4.5	8.5	
11-12		3.5				10.0	9.0	10.0	4.0			3.0					1.5			11.5	4.5	8.5	
12-13							6.0	11.0	4.5		3.5						2.0				4.5	8.5	5.0
13-14			3.0				3.5	11.5	5.5								2.5				4.5	8.5	
14-15									6.0								3.0				4.5	8.5	
15-16		3.0			9.0	8.5			7.0		1.5		3.0	1.0	1.5		3.5				4.5	8.5	6.5
16-17				9.5		11.5			7.5									10.5			4.5	8.5	
17-18			2.5					2.5	8.5		3.5		4.5	2.0	2.5						4.5	8.5	
18-19							10.0	3.0	9.0							1.0					4.5	8.5	8.0
19-20		2.0				7.0	7.0	4.0	10.0					3.0	3.5	2.0			11.5		4.5	8.5	
20-21						10.5	4.0	4.5	11.0		1.0					2.5					4.5	8.5	
21-22			2.0					5.5	11.5						5.0	3.0					4.5	8.5	9.5
22-23					11.5			6.0			3.0		1.0			3.5					4.5	8.5	
23-24	4.0	1.5						7.0										11.0			4.5	8.5	
24-25						9.0		7.5				1.0	3.0					1.5			4.5	8.5	11.0
25-26			1.5				10.5	8.5	2.0	2.5		3.0					1.0			1.0	4.5	8.5	
26-27	1.0						8.0	9.0	3.0				5.0				1.5				4.5	9.0	
27-28		1.0					5.0	10.0	4.0		2.5						2.5				5.0	9.0	
28-29			5.5		9.5	7.5	2.0	10.5	4.5								3.0			1.5	5.0	9.0	
29-30						10.5		11.5	5.5								3.5				5.0	9.0	

	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	VV VIR	AG VIR	AH VIR	AH VIR	AK VIR	AW VIR	AW VIR	AZ VIR	AZ VIR	BH VIR	Z VUL	AW VUL	AX VUL	AY VUL	BE VUL	BO VUL
MAX	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	11.0	9.9	10.4
MIN	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.5	12.9	11.4	13.3
DUR	3	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5	5	4	5	4
TOT		(S)									(S)			(S)		(S)							
0- 1	5.0	1.0	10.0	5.5		9.0	4.0		9.0	2.0	7.0		7.0	3.0	2.5	7.0							6.0
1- 2	6.5	2.5	5.0				5.0	9.5		7.5	2.5		8.5	4.5	4.0	8.0	11.0	9.5					
2- 3	8.0	4.0	9.0	7.0			6.5	7.0	7.5	3.0	8.0	2.5	1.5	6.0	5.0	9.0	7.0			6.5			
3- 4	1.0	5.5	4.0		3.0		7.5	4.0		8.5	3.5	7.0	3.0	7.5	6.0	2.0	2.5		9.5				
4- 5	3.0	7.0	8.5	8.5	8.0		8.5	1.5	5.5	4.0	9.0	11.5	4.5	9.0	7.5	3.0				7.0			
5- 6	4.5	8.5	3.0	1.0			10.0	9.5		9.0	4.5		6.0	2.0	8.5	4.5					10.5	6.5	
6- 7	6.0	1.5	7.5	10.0			11.0	7.0	4.0	5.0	9.5		7.5	3.0	1.5	5.5	9.0	7.0		8.0			
7- 8	7.5	3.0	2.5	2.5		6.5		4.5	10.5	10.0	5.0		9.0	4.5	2.5	6.5	4.5		10.0				
8- 9	9.0	4.5	6.5	11.5			1.0	2.0	2.0	5.5	10.5		2.0	6.0	3.5	8.0				8.5		9.0	
9-10	2.0	6.0	1.5	4.0	5.5		2.0	10.0	9.0	1.5	6.0	6.5	3.5	7.5	5.0	9.0							
10-11	3.5	7.5	6.0		11.0		3.5	7.5		6.5	1.5	11.0	5.0	9.0	6.0	2.0	11.0			9.0			
11-12	5.0	9.0	10.0	5.5			4.5	5.0	7.5	2.0	7.0		6.5	2.0	7.0	3.0	6.5	5.0	11.0			11.5	
12-13	6.5	2.0	5.0				5.5	2.5		7.5	2.5		8.0	3.5	8.5	4.0	2.0		6.5	9.5			
13-14	8.0	3.5	9.5	7.0			7.0	10.5	5.5	3.0	8.0		1.0	5.0	1.0	5.5							
14-15	1.0	5.5	4.5		3.0	4.0	8.0	8.0		8.5	3.5		2.5	6.5	2.5	6.5				10.0			
15-16	2.5	7.0	8.5	8.5	8.0		9.5	5.5	4.0	4.0	9.0	5.5	4.0	8.0	3.5	7.5	8.5		12.0				
16-17	4.0	8.5	3.5	1.0		11.0	10.5	2.5	10.5	9.5	4.5	10.0	5.5	1.0	4.5	9.0	4.0		7.0	11.0			
17-18	5.5	1.5	8.0	10.0			11.5	11.0	2.0	5.0	10.0		7.0	2.5	6.0	1.5							
18-19	7.0	3.0	2.5	2.5				8.0	9.0	10.0	5.5		8.5	4.0	7.0	3.0				11.5			
19-20	8.5	4.5	7.0	11.5			1.5	5.5		6.0	10.5		1.5	5.5	8.0	4.0	10.5					6.0	
20-21	1.5	6.0	2.0	4.0	5.5		2.5	3.0	7.0	1.5	6.0		3.0	7.0	1.0	5.0	6.0		8.0				
21-22	3.0	7.5	6.0		11.0	1.5	4.0	11.0		6.5	2.0	5.0	4.5	8.5	2.0	6.5	1.5						
22-23	4.5	9.0	1.0	5.5			5.0	8.5	5.5	2.0	7.0	9.5	6.0	1.5	3.5	7.5					7.5	8.5	
23-24	6.5	2.0	5.5			9.0	6.5	6.0		7.5	2.5		7.5	3.0	4.5	8.5		11.5					
24-25	8.0	3.5	9.5	7.0			7.5	3.5	4.0	3.0	8.0		9.0	4.5	5.5	1.5	8.0		8.5				
25-26	9.5	5.0	4.5		3.0		8.5	11.5	10.5	8.5	3.5		2.0	6.0	7.0	2.5	3.5					11.0	
26-27	2.5	6.5	9.0	8.5	8.0		10.0	9.0	2.0	4.0	9.0		3.5	7.5	8.0	4.0							
27-28	4.0	8.0	4.0	1.0			11.0	6.5	9.0	9.5	4.5	4.0	5.0	9.0	9.0	5.0							11.5
28-29	5.5	1.0	8.0	10.0				4.0		5.0	10.0	8.5	6.0	2.0	2.0	6.0	10.0	9.5	9.5				
29-30	7.0	2.5	3.0	2.5					7.0	10.5	5.5		7.5	3.5	3.0	7.5	5.5						10.5

	BS VUL	BT VUL	BU VUL	CD VUL
MAX	11.0	11.8	10.6	11.5
MIN	11.5	12.5	11.4	12.6
DUR	3	3	3	4
TOT				
0- 1	6.0		10.0	11.5
1- 2				
2- 3		7.0		
3- 4		10.5	6.0	
4- 5			9.5	
5- 6	11.5			6.5
6- 7	10.5			
7- 8	9.5			7.5
8- 9	8.0		9.0	
9-10	7.0			9.0
10-11	6.0	6.5		
11-12		10.0		10.0
12-13			8.5	
13-14				11.5
14-15				
15-16	11.5			
16-17	10.5		8.0	
17-18	9.0		11.5	
18-19	8.0	6.5		6.5
19-20	7.0	10.0		
20-21	6.0		7.5	7.5
21-22			11.0	
22-23				8.5
23-24				
24-25			7.5	10.0
25-26	11.5		10.5	
26-27	10.5	6.0		11.0
27-28	9.0	9.5		
28-29	8.0		7.0	
29-30	7.0		10.0	

AAVSO Eclipsing Binary Ephemeris for May 2015 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	BD AND	BX AND	RY AQR	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.3	8.6	8.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1	5.7	5.7
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.7	9.5	10.1	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1	6.4	6.4
DUR	3	11	8	4	3	3	3	4	3	4	5	3	3	7	3	3	7	4	4	3	3	5	5
TOT		2															3						
							(S)	(S)								(S)					(S)		(S)
0- 1	5.5						9.0		6.5	9.5						6.0							
1- 2							8.5	11.0	4.5							6.5					10.0		
2- 3	3.0			9.0			8.5	10.5								6.5				10.0			
3- 4	9.0						8.5	10.5		10.5		7.5				7.0					10.5		2.0
4- 5				11.0	9.0		8.5	10.0	10.5			10.5				7.5	4.0			11.0			
5- 6	6.5						8.5	9.5	8.5							7.5							
6- 7							8.0	9.5	7.0							8.0							
7- 8	3.5						8.0	9.0	5.0		11.0					8.5		10.0	6.5				
8- 9	10.0				11.0		8.0	8.5	3.5			8.0				8.5			9.5				3.5
9-10				8.0			8.0	8.5			10.0	10.5				9.0		6.5					
10-11	7.0		11.0				8.0	8.0	11.0				9.5	8.5		9.5							
11-12				10.0			7.5	7.5	9.0	9.0	9.0					9.5							
12-13	4.5						7.5	7.5	7.0							10.0							
13-14	10.5		10.5				7.5	7.0	5.5		8.5	8.0				10.5							4.5
14-15	1.5						7.5	6.5	3.5	10.0		10.5			4.5	10.5	8.0				9.5		
15-16	8.0						7.5	6.5			7.5				5.0	11.0				10.0			
16-17			9.5			11.0	7.0	6.0					10.5		5.0						10.5		
17-18	5.0					11.0	7.0	5.5	9.5		7.0				5.5				5.5	10.5			
18-19				9.0		11.0	7.0	5.5	7.5			8.0			6.0				8.0		11.0		
19-20	2.5		9.0			11.0	7.0	5.0	6.0			10.5			6.0				11.0				
20-21	8.5					10.5	7.0	4.5	4.0						6.5			8.0					
21-22						10.5	6.5	4.5							7.0								
22-23	6.0		8.5			10.5	6.5			8.5					7.0			4.5					
23-24					9.5	10.5	6.5		10.0			8.0			7.5								
24-25	3.0					10.5	6.5		8.0			10.5			8.0								
25-26	9.5	7.5	8.0	8.0		10.0	6.0		6.5	9.5				8.0	8.0								
26-27						10.0	6.0		4.5						8.5								
27-28	6.5			10.0	11.0	10.0	6.0								9.0				4.5			2.0	
28-29						10.0	6.0			11.0		8.0			9.0				7.0	10.0			
29-30	4.0	10.5				10.0	6.0		10.5	1.5		11.0	9.0		9.5				10.0		10.0		
30-31	10.0					9.5	5.5		8.5						9.5					10.5			

	AP AUR	AP AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA	TU CMA	TZ CMA
MAX	10.9	10.9	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4	9.7	9.8
MIN	11.4	11.4	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9	10.7	10.5
DUR	4	4	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4	5	4	4
TOT		(S)					(S)		(S)		(S)		(S)	(S)					(S)				
0- 1	3.5							2.0	6.0	1.5	5.5	6.5	3.0			8.5	7.5	6.5			1.5		
1- 2			3.0		3.5		2.5	9.0	5.0	8.0	4.0	3.5	7.5						10.0				
2- 3		3.5						8.5	4.5	7.0	3.0	8.0	4.5			3.5			4.0				
3- 4								7.5	4.0	5.5	2.0	5.5	2.0		7.5	8.0		8.0					
4- 5	3.0				2.5			7.0	3.0	4.5	8.0	3.0	6.5	6.0			7.0	2.0					
5- 6	6.5							6.5	2.5	3.5	7.0	7.5	4.0			2.5			5.5				
6- 7		3.0				2.0		6.0	2.0	2.0	6.0	5.0	1.5			7.0		9.0				2.0	
7- 8		6.5			1.5			5.0	9.0	8.5	4.5	2.5	6.0					3.5		2.0			
8- 9	3.0			4.0				4.5	8.5	7.5	3.5	7.0	3.5			2.0	6.5		7.0				1.5
9-10	6.0							4.0	7.5	6.0	2.5	4.5	8.0	5.5		6.0		10.5					
10-11		2.5						3.0	7.0	5.0	9.0	1.5	5.5			10.5		5.0					
11-12		6.0			4.5		1.5	2.5	6.5	4.0	7.5	6.0	2.5						8.5				
12-13	2.5							2.0	6.0	2.5	6.5	3.5	7.0			5.5	6.5		2.5				
13-14	6.0			3.5				9.0	5.0	1.5	5.5	8.0	4.5		5.5	10.0		6.0					
14-15		2.5			3.5			8.5	4.5	8.0	4.0	5.5	2.0	5.5					9.5				
15-16		5.5						7.5	4.0	7.0	3.0	3.0	6.5			4.5			4.0				
16-17	2.0							7.0	3.0	5.5	2.0	7.5	4.0			9.0	6.0	7.5					
17-18	5.5				2.5			6.5	2.5	4.5	8.5	5.0	8.5					2.0	11.0				
18-19		2.0		2.5				5.5	2.0	3.5	7.0	2.0	6.0			3.5			5.5				
19-20		5.5						5.0	9.0	2.0	6.0	7.0	3.0	5.0		8.0		9.0					
20-21	2.0				1.5			4.5	8.5	8.5	5.0	4.0	7.5				5.5	3.5					
21-22	5.0							4.0	7.5	7.5	3.5	1.5	5.0			3.0			7.0				
22-23		1.5						3.0	7.0	6.5	2.5	6.0	2.5			7.5		10.5			1.5		
23-24		5.0		2.0		4.0		2.5	6.5	5.0	9.0	3.5	7.0		3.5			4.5					
24-25	1.5				5.0			2.0	5.5	4.0	8.0	8.0	4.5	5.0		2.0	5.5		8.0	3.0			
25-26	5.0							9.0	5.0	3.0	6.5	5.5	2.0			6.5			2.5				
26-27								8.5	4.5	1.5	5.5	3.0	6.5		11.0	11.0		6.0					
27-28		4.5			3.5			7.5	4.0	8.0	4.5	7.5	4.0						9.5				
28-29				1.5			3.5	7.0	3.0	7.0	3.0	4.5	8.5			5.5	5.0		4.0				
29-30	4.5							6.5	2.5	5.5	2.0	2.0	5.5	5.0		10.0		7.5					
30-31			1.5		2.5			5.5	2.0	4.5	8.5	6.5	3.0					1.5	11.0				

	UU CMA	XZ CMI	AK CMI	RW CAP	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP
MAX	10.0	9.7	10.1	9.8	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1	6.7	8.8	11.4	11.4
MIN	12.5	10.2	11.5	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9	9.8	9.8	12.0	12.0
DUR	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	4	4	5	4	4	3	3
TOT																				2			
										(S)								(S)					(S)
0- 1							6.5		9.0	5.0		7.0		6.0		10.0						1.5	6.5
1- 2					7.5			4.0	8.0	4.0	10.0		8.0	10.0	2.0							7.5	2.5
2- 3		2.0					2.0		7.0	3.0	4.5	8.0			8.0	4.0						3.5	8.5
3- 4	2.0		4.0						6.0	2.0			4.0					6.5	10.5	3.5		10.0	4.5
4- 5						5.0			5.0	8.5		9.0										6.0	11.0
5- 6						10.0		6.5	4.0	7.5	8.0										9.0	2.0	7.0
6- 7		3.0							2.5	6.5	3.0	10.0			1.5			8.5	9.5		7.0	8.0	3.0
7- 8			3.0						1.5	5.5		2.0		5.0	7.5	10.0					4.5	4.0	9.0
8- 9					10.0				8.5	4.5		11.0		9.0						3.5	2.0	10.0	5.0
9-10							8.0	9.0	7.5	3.5	6.5	3.0				4.0		10.5	8.0			6.0	11.0
10-11		4.5				4.5			6.0	2.5												2.0	7.0
11-12			2.0		6.5	9.0	3.5		5.0	9.0		4.0										8.0	3.0
12-13								2.5	4.0	8.0	9.5		9.0		7.0				7.0			4.0	9.0
13-14		2.0							3.0	7.0	4.5	5.0					7.0			3.0		10.0	5.0
14-15									2.0	6.0			5.0	4.0		10.0		1.5			9.5	6.0	
15-16									8.5	5.0		6.0		7.5					5.5		7.0	2.5	7.5
16-17	2.0		4.0			4.0		5.0	7.5	4.0	8.0		1.5			4.0	9.0				4.5	8.5	3.5
17-18		3.0				8.5			6.5	3.0	2.5	7.0			6.5						2.5	4.5	9.5
18-19					9.5		9.5		5.5	1.5									4.0	2.5		10.5	5.5
19-20									4.5	8.5	11.0	8.0										6.5	1.5
20-21			3.5				5.0	7.5	3.5	7.5	6.0							5.5				2.5	7.5
21-22		4.5							2.5	6.0		9.0		2.5		10.0			3.0			8.5	3.5
22-23						3.5			1.5	5.0		1.5		6.5	6.5							4.5	9.5
23-24						8.0			8.0	4.0	9.5	10.0	10.0	10.5		4.0		8.0		2.5	10.0	10.5	5.5
24-25		2.0	2.5					10.0	7.0	3.0	4.0	2.5					2.5		1.5		7.5	6.5	1.5
25-26									6.0	2.0			6.5								5.0	2.5	7.5
26-27				10.5					5.0	8.5		3.5						10.0			2.5	9.0	4.0
27-28							11.0	3.5	4.0	7.5	7.5		2.5		6.0							5.0	10.0
28-29		3.0	1.5		8.5	3.0			3.0	6.5	2.5	4.5		1.5		10.0				2.0		11.0	6.0
29-30	2.0		4.5			7.5	6.5		1.5	5.5				5.5								7.0	2.0
30-31									8.5	4.5	11.0	5.5		9.0		4.0	6.5					3.0	8.0

	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM (S)	RZ COM	RZ COM (S)	SS COM	SS COM (S)	CC COM	CC COM (S)	U CRB	RW CRB	W CRV	W CRV (S)	RV CRV	RV CRV (S)	V CRT	Y CYG	Y CYG (S)	SW CYG
MAX	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.0	9.5	7.0	7.0	9.3
MIN	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.0	10.2	7.6	7.6	11.8
DUR	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6	6	5
TOT																							2
0- 1		9.5				2.5	5.5	4.0	8.0	6.0		4.0	6.5		10.5	3.0	8.0	7.0					
1- 2		9.5				7.0	4.0	4.0	8.5	2.0	7.0	6.5	4.0		4.0	7.0	2.5			5.0		5.0	
2- 3	8.0	9.0		2.0	2.5	6.0	3.0	4.5	8.5	7.5	2.5	3.5	6.5	6.5		1.5	6.5		3.5		10.5		
3- 4		8.5	7.0	6.0	4.5	4.5	1.5	5.0	9.0	3.5	8.5	6.0	3.5		8.0	5.5		6.5					
4- 5		8.5		10.0	6.5	3.5	6.0	5.5	9.5	9.0	4.0	3.5	6.0		1.5		5.0					5.0	
5- 6		8.0			9.0	2.0	5.0	5.5	1.5	5.0	10.0	6.0	3.0			4.0			3.0		10.5		
6- 7		7.5			11.0	6.5	4.0	6.0	2.0	10.5	5.5	3.0	5.5		6.0	8.0	3.5	6.5		3.0			
7- 8		7.0				5.5	2.5	6.5	2.5	6.5	1.5	5.5	3.0			3.0	7.5					4.5	9.0
8- 9		7.0	4.0		2.0	4.0	7.0	7.0	3.0	2.5	7.0	2.5	5.5		10.0	7.0	2.0		3.0	5.5	10.5		
9-10	8.0	6.5		1.5	4.5	3.0	6.0	7.0	3.0	8.0	3.0	5.0	2.5	4.0	3.5	1.5	6.0	6.0					
10-11		6.0		5.5	6.5	2.0	4.5	7.5	3.5	4.0	9.0	2.5	5.0			5.5						4.5	
11-12		6.0	10.5	9.5	8.5	6.0	3.5	8.0	4.0	9.5	4.5	5.0	2.0		8.0		4.5		2.5		10.5		
12-13		5.5			10.5	5.0	2.0	8.5	4.5	5.5	10.5	2.0	4.5			4.0		5.5					
13-14		5.0	1.5			4.0	6.5	8.5	4.5		6.0	4.5	2.0			8.0	3.0		8.5	3.5		4.5	
14-15		5.0			2.0	2.5	5.5	9.0	5.0	7.0	2.0	1.5	4.5		5.5	2.5	7.0		2.0		10.5		
15-16		4.5			4.0	1.5	4.0	9.5	5.5	2.5	7.5	4.0	1.5			6.5	2.0	5.5		6.0			
16-17	8.5	4.0	8.0		6.0	6.0	3.0	1.5	6.0	8.5	3.5	6.5	4.0	1.5	10.0		5.5		8.0			4.5	
17-18		4.0		5.0	8.5	4.5	2.0	2.0	6.0	4.0	9.0	4.0	6.5		3.5	5.0			2.0		10.5		
18-19		3.5		8.5	10.5	3.5	6.5	2.5	6.5	10.0	5.0	6.5	3.5				4.5	5.0					
19-20		3.0				2.0	5.0	3.0	7.0	6.0	10.5	3.5	6.0		7.5	3.5	8.0		8.0			4.5	
20-21		3.0			1.5	6.5	4.0	3.0	7.0	1.5	6.5	6.0	3.5			7.5	3.0		1.5	4.0	10.0		
21-22		2.5	5.5		4.0	5.5	2.5	3.5	7.5	7.5	2.5	3.0	6.0			2.0	7.0	5.0					2.0
22-23		2.0			6.0	4.5	1.5	4.0	8.0	3.0	8.0	5.5	3.0		5.5	6.0	1.5		7.5	6.5		4.5	
23-24	9.0	2.0			8.0	3.0	6.0	4.5	8.5	9.0	4.0	3.0	5.5				5.5		1.5		10.0		
24-25		1.5		4.0	10.5	2.0	4.5	4.5	8.5	4.5	9.5	5.5	2.5		9.5	4.5		4.5					
25-26				8.0		6.5	3.5	5.0	9.0	10.5	5.5	2.5	5.0		3.0		4.0		7.0	2.0		4.0	
26-27			2.5		1.5	5.0	2.0	5.5	9.5	6.0		5.0	2.5	10.0		3.0	8.0				10.0		
27-28					3.5	4.0	6.5	6.0	1.5	2.0	7.0	2.0	5.0		7.5	7.0	2.5	4.5		4.5			
28-29					6.0	2.5	5.5	6.0	2.0	8.0	3.0	4.5	2.0			2.0	6.5		7.0			4.0	
29-30			9.0		8.0	1.5	4.5	6.5	2.5	3.5	8.5	2.0	4.5			5.5				7.0	10.0		
30-31	9.0				10.0	6.0	3.0	7.0	3.0	9.5	4.5	4.5	1.5		5.0		5.0	4.0					5.5

	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA
MAX	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8
MIN	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5
DUR	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3	4	3	5
TOT																2							1
													(S)										
0- 1		9.5		7.0	8.5						10.0				3.0								
1- 2			11.0					9.5	7.0		7.0		11.0		6.5				6.5		4.5	3.0	
2- 3		7.0	10.0		6.0		7.0				4.5	3.5			10.0			8.0				5.5	
3- 4			9.5			10.0			5.0											7.5		8.0	
4- 5		4.0	8.5	7.0		8.5		3.0		9.0			5.5		3.0				10.5			10.5	
5- 6		10.5	8.0		9.5	7.0	3.0			6.0					6.5				5.5		6.0		8.0
6- 7			7.0			5.5			10.0			8.0			10.0					11.0		2.0	
7- 8		7.5	6.5		7.0											10.5				5.5		4.5	
8- 9			5.5	7.0					8.0		10.5		10.0	4.0	3.0			7.0	10.0			7.0	3.5
9-10	3.5	5.0	5.0		4.5						7.5				6.5				5.0		8.0	9.5	
10-11		11.0			10.5				6.0	9.5	5.0				9.5					9.0			
11-12		2.0				10.0				6.0			4.5										
12-13		8.0		7.0	8.0	8.5		8.5	4.5						3.0	5.5			9.0			3.5	
13-14						7.0			11.0			7.0			6.0						9.5	6.0	
14-15		5.5			5.5	5.5									9.5			6.0		7.0		8.5	
15-16						4.5			9.0				9.0	5.0			10.5	10.5				11.0	
16-17		3.0		7.0						10.0	11.0								8.0		3.0		
17-18		9.0			9.5				7.5	6.5	8.0	11.0			6.0					10.0		2.5	
18-19											5.5		3.5		9.5		7.5					5.0	
19-20	2.5	6.0			7.0	10.0	8.0		5.5		3.0											7.5	8.5
20-21				6.5		8.5						6.0							7.5		4.5	10.0	
21-22		3.5			4.0	7.0									6.0			9.5		8.0			
22-23	10.0	9.5			10.5	5.5	4.0		10.5	10.0			8.0	6.0	9.5							1.5	4.0
23-24						4.5		8.0		6.5												4.0	
24-25		7.0		6.5	8.0				8.5			10.0							6.5		6.5	6.5	
25-26											8.5				6.0					6.0		9.0	
26-27		4.0			5.5				6.5		6.0				9.0								
27-28		10.5				10.0					3.5	5.0						8.5	10.5				
28-29				6.5		8.5			4.5	10.5									5.5	9.0	8.0	3.0	
29-30		7.5			9.0	7.0				7.0			7.0	7.0	5.5							5.5	
30-31						6.0				3.5					9.0							8.0	

	UZ DRA	UZ DRA	AI DRA	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO
MAX	9.9	9.9	7.2	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4
MIN	10.7	10.7	8.2	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3	9.5	11.0	11.0	12.7	12.7
DUR	5	5	4	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4
TOT				1			1																
		(S)											(S)				(S)				(S)		
0- 1			11.0			9.5			10.0				3.5	2.5		8.5					4.0		
1- 2		3.0				5.0					5.0		3.5			7.5			6.5			5.0	
2- 3					2.0				3.5				3.0			6.5	10.5						6.5
3- 4								2.0			6.0		3.0	4.0		5.5	9.5	6.0			6.5		
4- 5		9.5	1.5										2.5				8.5	8.0					
5- 6			6.0			7.5	3.0						2.5				7.5	10.0					
6- 7			11.0			3.0		4.5		7.0			2.5		1.5	10.5	7.0				8.5	6.5	
7- 8					1.5		9.5		8.5				2.0		2.5	9.5	6.0			3.0			7.0
8- 9										1.5		6.0	2.0	2.5	3.5	9.0							
9-10	7.0					9.5		7.0	2.0			5.5	2.0		5.0	8.0			7.0		10.5		
10-11						5.0					2.0	5.5	1.5			7.0	11.0			5.0			
11-12			6.0									5.5	1.5	4.0		6.0	10.0					7.5	
12-13			11.0					9.0			3.0	5.0					9.0						
13-14										10.5		5.0					8.0			7.0			
14-15		4.5				7.5	4.5		7.0		4.5	4.5				11.0	7.0						
15-16						3.0				5.0		4.5				10.0	6.5						
16-17							11.0				5.5	4.5		2.0		9.5	5.5			9.0			
17-18		10.5	6.0									4.0				8.5		5.5	7.5		3.5		
18-19			10.5	4.0		9.5						4.0			1.5	7.5		7.0				1.5	
19-20	1.5					5.0						4.0		4.0	3.0	6.5	10.5	9.0		11.0			1.5
20-21								3.0				3.5			4.0	5.5	9.5	11.0			5.5		
21-22									5.5			3.5			5.0		8.5						
22-23	8.0									8.5		3.0					7.5						
23-24			5.5			7.5	6.0	5.5			1.5	3.0				10.5	6.5				7.5	3.0	
24-25			10.5			3.0				3.5		3.0		2.0		9.5	6.0			2.0			2.5
25-26											3.0	2.5				9.0			8.0				
26-27								8.0	10.5			2.5				8.0					9.5		
27-28		5.5				9.5					4.0	2.0		3.5		7.0	11.0			4.0			
28-29						5.0			4.0			2.0	6.0			6.0	10.0					4.5	
29-30			5.5					10.0			5.5	2.0	6.0				9.0						3.5
30-31			10.5									1.5	5.5		2.0		8.0		4.0	6.0			

	UV LEO	VZ LEO	T LMI	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RW MON	AT MON	BB MON	BO MON	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH	ER ORI	ET ORI	FL ORI	FT ORI
MAX	9.5	10.6	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	9.1	10.6	10.6	10.8	5.8	10.5	10.1	8.8	6.2	9.5	11.2	10.5	9.1
MIN	10.2	11.7	12.6	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.9	11.4	11.3	12.1	6.5	11.2	10.7	9.4	7.0	10.2	12.4	13.2	9.7
DUR	3	4	6	6	7	4	5	5	4	5	5	5	4	5	5	5	3	3	4	3	5	3	4
TOT											1												
										(S)										(S)			
0- 1	2.5				1.5			3.0									4.5	9.5					
1- 2	7.5		3.0	10.0													5.5	5.0	4.0				
2- 3					9.5			2.0							6.5		6.5	10.5					
3- 4	2.5					9.5											7.0	6.5	4.0				
4- 5	7.5	3.0	3.5	7.0													8.0						
5- 6		5.0											3.5				8.5	7.5	3.5				
6- 7	2.5	7.0				6.5			5.0								9.5	3.0	11.0				
7- 8	7.5		4.0	4.5											7.0		2.0	8.5	3.0				
8- 9									9.5	2.5			1.5				3.0	4.0	11.0				
9-10	2.5				9.0	3.0								2.5			4.0	9.5	2.5				
10-11	7.5		4.0				9.0										4.5	5.0	10.5				
11-12																	5.5	10.5					
12-13	2.5						6.5								8.0		6.0	6.0	10.0				
13-14	7.5		4.5														7.0						
14-15				9.0			4.0										8.0	7.5	9.5				
15-16	2.5																8.5	3.0					
16-17	7.5	2.5	5.0		8.5	7.5					3.0		3.0				9.5	8.5	9.5				
17-18		4.5		6.0					2.5						8.5		10.5	4.0					3.0
18-19	2.5	7.0															3.0	9.5	9.0				
19-20	7.5		5.5			4.0			7.0				1.5			3.0	3.5	5.0					
20-21				3.0													4.5	10.5	8.5				
21-22	2.5								11.0							4.5	5.5	6.0					
22-23	7.5		6.0												9.5		6.0		8.0		1.5		
23-24					8.0							2.0				6.0	7.0	7.0					
24-25	2.5			10.5													8.0	3.0	7.5				
25-26	7.5		6.5					11.0				2.5				7.5	8.5	8.5					
26-27						8.5											9.5	4.0	7.5				
27-28	2.5			7.5			9.5	10.0				3.5	3.0		10.0	9.0	10.5	9.5		1.5		1.5	
28-29	7.5	2.5	7.0														3.0	5.0	7.0				
29-30		4.5				5.5	7.0	8.5						3.0	2.5	10.5	3.5	10.5					
30-31	2.5	6.5		4.5	7.5				4.0								4.5	6.0	6.5				

	FZ ORI	FZ ORI	GU ORI	GU ORI	U PEG	U PEG	TY PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	Z PER	RT PER	ST PER	XZ PER	BETA PER	Y PSC	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR
MAX	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.6	10.6	10.9	9.6	10.2	9.9	10.6	9.7	10.6	2.2	9.0	9.7	9.7	6.4	6.4	12.3
MIN	11.3	11.3	13.5	13.5	10.5	10.5	12.6	11.2	11.2	11.5	10.8	11.0	12.4	12.0	13.2	12.7	3.5	12.0	10.6	10.3	9.1	7.6	13.3
DUR	3	3	4	4	3	3	6	3	3	3	2	4	6	4	5	4	8	7	4	4	6	5	4
TOT													2		1						2		
		(S)		(S)		(S)			(S)											(S)			
0- 1	1.5							9.0				6.5				9.5							
1- 2		1.5	3.0			10.0		11.0	6.5	7.5			1.5	10.0									
2- 3	1.5		1.5		8.5				8.5	10.5					1.5								6.0
3- 4		1.5							10.5	6.5				3.0							7.5		9.0
4- 5	1.5					10.0		8.5		9.5	9.5		3.0									7.0	
5- 6		1.5		3.0	8.5			10.5		6.0													
6- 7	1.5			1.5					8.0	9.0						4.0							5.0
7- 8		1.5				9.5			10.0					9.0				10.5					8.0
8- 9	1.5				8.0			8.0		8.0						11.0							11.0
9-10		1.5	3.0					10.0		11.0	9.0			1.5									
10-11	1.5		1.5			9.5			7.5	7.0										4.0			
11-12		1.5			8.0				9.5	10.0												9.5	6.5
12-13	1.5				11.0			7.5		6.0				11.0					3.5				9.5
13-14		1.5		3.0		9.5		9.5		9.0						1.5					10.5		
14-15	1.5			1.5	8.0				7.0	5.0	8.5			4.0						3.0			
15-16		1.5			11.0				9.0	8.0													5.0
16-17	1.5					9.5		6.5	11.0	11.0			8.5				3.0		3.0				8.0
17-18		1.5	3.0		8.0			8.5		7.0												7.5	11.0
18-19	1.5		1.5		11.0			11.0	6.5	10.0				10.0						2.5			
19-20		1.5				9.5			8.5	6.5	8.0		10.0										
20-21	1.5				8.0				10.5	9.5				2.5					2.0		5.0		6.5
21-22		1.5		3.0	11.0		8.0	8.0		5.5						3.0							10.0
22-23	1.5			1.5		9.5		10.0		8.5			11.0							2.0			
23-24		1.5			8.0				8.0							10.5							
24-25	1.5				11.0		10.5		10.0	7.5	8.0			8.5					1.5			10.0	5.5
25-26		1.5	3.0			9.5		7.5		10.5													8.5
26-27	1.5		1.5					9.5		6.5	11.0												
27-28		1.5			11.0				7.5	9.5													
28-29	1.5					9.5			9.5	5.5													
29-30		1.5		3.0				7.0		8.5				11.0		4.5							7.0
30-31	1.5			1.5	11.0			9.0									11.0				8.5	8.0	10.0

	AO SER	CC SER	CC SER	RZ TAU	TY TAU	WY TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TX UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	VV VIR	AG VIR
MAX	10.6	11.1	11.1	10.5	11.5	11.5	10.3	10.3	10.9	8.9	11.4	9.1	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8
MIN	12.1	11.7	11.7	11.2	12.0	11.7	11.0	11.0	11.9	12.0	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4
DUR	4	4	4	3	2	4	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	4
TOT			(S)					(S)					(S)			(S)							
0- 1			6.0									5.0	9.0		8.5	4.0	7.5			6.5	2.0	9.5	
1- 2			7.0									5.0	9.0		1.5	5.5	2.0	4.0	5.5		3.0	6.5	5.5
2- 3		1.5	7.5	2.5								5.0	9.0		3.0	7.0	6.5				4.5	4.0	
3- 4	8.5	2.0	8.5			3.0	1.5		10.0			5.0	9.0		4.5	9.0	1.5	5.5			5.5	1.5	3.5
4- 5	6.0	3.0	9.0									5.0	9.0		6.0	2.0	5.5				7.0	9.5	
5- 6	3.0	3.5	10.0									5.0	9.0		7.5	3.5	10.0	7.0			8.0	7.0	2.0
6- 7		4.5	10.5									5.0	9.0		9.0	5.0	5.0		3.0		9.0	4.5	9.0
7- 8		5.5		2.0								5.0	9.0		2.0	6.5	9.5	8.5	8.5	4.0	10.5	2.0	
8- 9		6.0										5.0	9.0		3.5	8.0	4.0					10.0	7.0
9-10		7.0									9.0	5.0	9.0		5.0	9.5	8.5	10.0		11.0		7.5	
10-11	9.5	7.5	1.5					1.5	10.5			5.0	9.0		6.5	2.5	3.5	2.5			1.5	5.0	5.5
11-12	6.5	8.5	2.0									5.0	9.0		8.0	4.0	7.5				2.5	2.5	
12-13	3.5	9.0	3.0	2.0		3.0					9.0	5.0	9.0		10.0	5.5	2.5	4.0	5.5		4.0	10.5	3.5
13-14		10.0	3.5						9.0			5.0	9.0		3.0	7.0	7.0				5.0	8.0	
14-15		10.5	4.5									5.0	9.0		4.5	8.5	1.5	5.5		1.5	6.0	5.0	2.0
15-16			5.5								9.5	5.0	9.0		6.0	1.5	6.0				7.5	2.5	8.5
16-17			6.0									5.0	9.0		7.5	3.0	10.5	7.0		8.5	8.5		
17-18	10.5		7.0	1.5			1.5		11.0			5.0	9.0		9.0	4.5	5.5		3.0		10.0	8.0	7.0
18-19	7.5	1.5	7.5								10.0	5.0	9.0		2.0	6.0	9.5	8.5	8.5		11.0	5.5	
19-20	4.5	2.0	8.5			1.5						5.0	9.5		3.5	7.5	4.5					3.0	5.5
20-21	1.5	3.0	9.0						9.5			5.5	9.5		5.0	9.0	9.0	10.0					
21-22		3.5	10.0			3.5					10.0	5.5	9.5		6.5	2.0	3.5	2.5			2.0	8.5	3.5
22-23		4.5	10.5		1.5							5.5	9.5		8.0	4.0	8.0				3.0	6.0	
23-24		5.0										5.5	9.5		9.5	5.5	3.0	4.0	5.5	6.0	4.5	3.5	2.0
24-25	11.0	6.0						1.5		11.0	10.5	5.5	9.5		2.5	7.0	7.0				5.5		8.5
25-26	8.5	7.0								10.5		5.5	1.5	2.5	4.0	8.5	2.0	5.5			6.5	9.0	
26-27	5.5	7.5								9.5		5.5	1.5		5.5	1.5	6.5				8.0	6.5	7.0
27-28	2.5	8.5	2.0						10.0		11.0	5.5	1.5		7.0	3.0	10.5	7.0			9.0	3.5	
28-29		9.0	3.0			1.5						5.5	1.5	4.0	8.5	4.5	5.5		3.0		10.5		5.0
29-30		10.0	3.5									5.5	1.5		1.5	6.0	10.0	8.5	8.5			9.5	
30-31		10.5	4.5			3.5						5.5	1.5		3.0	7.5	5.0			3.5		6.5	3.5

	AH VIR	AH VIR	AK VIR	AW VIR	AW VIR	AZ VIR	AZ VIR	BH VIR	Z VUL	AW VUL	AY VUL	BE VUL	BO VUL	BS VUL	BT VUL	BU VUL	CD VUL
MAX	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	9.9	10.4	11.0	11.8	10.6	11.5
MIN	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	4	4	4	3	3	3	3	4	6	5	4	5	4	3	3	3	4
TOT		(S)			(S)		(S)										
0- 1	6.0			9.0	5.0	4.5	8.5							5.5			
1- 2	1.5	6.5		2.0	6.5	5.5	9.5						9.0	4.5			6.0
2- 3	7.0	2.0		3.5	8.0	6.5	2.5			10.0				3.5		6.5	
3- 4	2.5	7.0	3.0	5.0	9.5	8.0	3.5	8.0	7.5	5.5		5.0	8.0			10.0	7.5
4- 5	7.5	3.0	8.0	6.5	2.5	9.0	5.0	3.5			9.0				6.0		
5- 6	3.0	8.0		8.0	4.0	2.0	6.0						6.5		9.5		8.5
6- 7	8.5	3.5		9.5	5.5	3.0	7.0			11.0		7.5		10.0		6.0	
7- 8	4.0	9.0		2.5	7.0	4.0	8.5	10.0		6.5			5.0	9.0		9.5	9.5
8- 9	9.5	4.5		4.0	8.5	5.5	9.5	5.5	5.0					8.0			
9-10	5.0		2.5	5.5	1.5	6.5	2.5				5.0	10.0	4.0	6.5			11.0
10-11		5.5	7.0	7.0	3.0	7.5	3.5							5.5		5.5	
11-12	6.0			8.5	4.5	9.0	4.5			7.0				4.5		9.0	
12-13	1.5	6.5		1.5	6.0	1.5	6.0	7.5							5.5		4.5
13-14	7.0	2.0		3.0	7.5	3.0	7.0	3.0	3.0						9.0		
14-15	2.5	7.5		4.5	9.0	4.0	8.0									5.5	6.0
15-16	7.5	3.0	1.5	6.0	2.0	5.0	9.5			8.0						8.5	
16-17	3.5	8.0	6.5	7.5	3.5	6.5	2.0	9.5			10.5			10.0			7.0
17-18	8.5	4.0		9.0	5.0	7.5	3.5	5.0				4.5		9.0			
18-19	4.0	9.0		2.0	6.5	8.5	4.5							7.5		5.0	8.5
19-20	9.5	4.5		3.5	8.0	1.5	5.5			8.5				6.5		8.0	
20-21	5.0			5.0	9.0	2.5	7.0			4.0		7.0		5.5	5.5		9.5
21-22		5.5		6.5	2.0	4.0	8.0	7.0			6.5			4.5	8.5		
22-23	6.0		5.5	8.0	3.5	5.0	9.0	2.5								4.5	11.0
23-24	1.5	6.5		9.5	5.0	6.0	2.0			9.5		9.5				8.0	
24-25	7.0	2.0		2.5	6.5	7.5	3.0			5.0						11.0	
25-26	2.5	7.5		4.0	8.0	8.5	4.5	9.0	9.5					11.0			4.5
26-27	8.0	3.0		5.5	9.5	9.5	5.5	4.5						10.0		4.0	
27-28	3.5	8.5		7.0	2.5	2.5	6.5			10.0				9.0		7.5	5.5
28-29	8.5	4.0	5.0	8.5	4.0	3.5	8.0			5.5				7.5	5.0	10.5	
29-30	4.5	9.0	9.5	1.5	5.5	5.0	9.0							6.5	8.5		7.0
30-31	9.5	4.5		3.0	7.0	6.0	2.0	6.5	7.5					5.5			

AAVSO Eclipsing Binary Ephemeris for June 2015 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	BD AND	BX AND	DS AND	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.3	8.6	10.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1	5.7	5.7
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.7	9.5	11.4	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1	6.4	6.4
DUR	3	11	8	4	3	3	3	4	3	4	4	3	3	7	3	3	7	4	4	3	3	5	5
TOT		2															3						
							(S)				(S)					(S)					(S)		(S)
0- 1			6.5			9.5	5.5		6.5		8.0				10.0	4.0	7.0	9.5			11.0		
1- 2	7.5			7.0		9.5	5.5		5.0		8.5	5.5			10.5	4.5						3.0	
2- 3						9.5	5.5		3.0	8.0	8.5	8.0			10.5	4.5		6.0					
3- 4	4.5		6.0	9.0	6.0	9.5	5.5				9.0	11.0				5.0							
4- 5	11.0					9.0	5.0		10.5		9.0		10.0			5.5		2.0					
5- 6	2.0					9.0	5.0		9.0	9.5	9.5					5.5					8.0		
6- 7	8.0					9.0	5.0	11.0	7.0		9.5	5.5				6.0			3.5	8.0			
7- 8					7.5	9.0	5.0	10.5	5.5		10.0	8.5		4.0		6.5			6.0		8.5		
8- 9	5.5			6.0		9.0	5.0	10.0	3.5	10.5	10.0					6.5			8.5	9.0			
9-10						8.5	4.5	10.0	2.0		10.5			7.5		7.0					9.0		
10-11	2.5			8.0		8.5	4.5	9.5		6.5	10.5					7.5				9.5			
11-12	9.0				9.5	8.5	4.5	9.0	9.5		11.0	5.5	8.0	10.5		7.5					10.0		
12-13				10.0		8.5	4.5	9.0	7.5			8.5				8.0				10.5			
13-14	6.0					8.5	4.5	8.5	6.0	7.5						8.0		7.5			10.5		
14-15						8.0	4.0	8.0	4.0						2.5	8.5							
15-16	3.5					8.0	4.0	8.0	2.0						3.0	9.0		4.0					
16-17	9.5					8.0	4.0	7.5		9.0		6.0			3.0	9.0			2.5				
17-18				7.0		8.0	4.0	7.0	10.0			8.5	8.5		3.5	9.5	6.0		5.0				
18-19	7.0					7.5	4.0	7.0	8.0						4.0	10.0			7.5		7.5		
19-20				9.0		7.5		6.5	6.0	10.0					4.0	10.0			10.5	8.0			
20-21	4.0					7.5		6.0	4.5						4.5	10.5					8.5		
21-22	10.5					7.5		6.0	2.5			6.0			5.0	11.0				8.5			
22-23					6.0	7.5		5.5				8.5			5.0						9.0		
23-24	7.5					7.0		5.0	10.0				9.5		5.5					9.5			
24-25				6.0		7.0		5.0	8.5	7.0				7.0	5.5			9.0			9.5		
25-26	5.0					7.0		4.5	6.5						6.0					10.0			2.5
26-27				8.0	7.5	7.0	11.0	4.0	5.0			6.0		10.0	6.5			5.5			10.5		
27-28	2.0	7.0				7.0	11.0	4.0	3.0	8.5		8.5			6.5		10.0		4.0	11.0			
28-29	8.5			10.0		6.5	10.5	3.5							7.0				6.5				
29-30						6.5	10.5	3.0	10.5				10.5		7.5				9.0				

	AP AUR	AP AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	XZ CMI	AK CMI	RW CAP	TY CAP	RZ CAS
MAX	10.9	10.9	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	9.7	10.1	9.8	10.5	6.4
MIN	11.4	11.4	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	10.2	11.5	10.8	11.6	7.8
DUR	4	4	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	3	4	5	4	4
TOT		(S)				(S)		(S)		(S)		(S)	(S)					(S)					
0- 1		4.5					5.0	9.0	3.5	7.0	4.0	7.5			5.0			5.0				5.0	
1- 2						10.0	4.5	8.5	2.0	6.0	8.5	5.0			9.5	4.5	8.5						
2- 3	4.0						3.5	7.5	8.5	5.0	6.0	2.5					3.0				5.0		
3- 4							3.0	7.0	7.5	3.5	3.5	7.0	4.5		4.0			6.5					2.0
4- 5		4.0					2.5	6.5	6.5	2.5	8.0	4.5			8.5		10.0		2.0				7.0
5- 6							2.0	5.5	5.0	9.0	5.5	9.0		9.0		4.0	4.5						
6- 7	4.0						9.0	5.0	4.0	8.0	2.5	6.0			3.0			8.0		2.5			
7- 8							8.5	4.5	3.0	6.5	7.0	3.5			7.5			2.0				7.5	
8- 9		3.5					7.5	3.5	9.5	5.5	4.5	8.0	4.5				6.0						
9-10							7.0	3.0	8.0	4.5	2.0	5.5			2.5	4.0		9.5					
10-11	3.5						6.5	2.5	7.0	3.0	6.5	3.0			7.0			3.5		2.0			6.5
11-12							5.5	2.0	6.0	2.0	4.0	7.5					7.0						
12-13		3.5		2.5	2.0		5.0	9.0	4.5	8.5	8.5	5.0						10.5			9.5		
13-14							4.5	8.5	3.5	7.5	6.0	2.5	4.0		6.0	3.5		5.0					
14-15	3.0						3.5	7.5	2.5	6.0	3.0	7.0			10.5		8.5					10.5	
15-16							3.0	7.0	9.0	5.0	8.0	4.0		7.0			3.0						
16-17		3.0					2.5	6.5	7.5	4.0	5.0	8.5			5.0			6.5					6.0
17-18							2.0	5.5	6.5	2.5	2.5	6.0			9.5	3.0	10.0					7.0	10.5
18-19	3.0						9.0	5.0	5.5	9.0	7.0	3.5	4.0				4.0						
19-20							8.0	4.5	4.0	8.0	4.5	8.0			4.5			7.5	3.0		4.5		
20-21		2.5					7.5	3.5	3.0	6.5	2.0	5.5			9.0			2.0					
21-22							7.0	3.0	2.0	5.5	6.5	3.0				2.5	5.5						
22-23	2.5						6.5	2.5	8.0	4.5	4.0	7.5			3.5	10.5		9.0					5.0
23-24							5.5	1.5	7.0	3.5	8.5	5.0	4.0		8.0			3.5		2.0			10.0
24-25		2.0	10.5				5.0	9.0	6.0	2.0	5.5	2.0					7.0					9.5	
25-26				2.5			4.5	8.0	4.5	8.5	3.0	6.5		5.0	2.5	2.5		10.5					
26-27	2.0						3.5	7.5	3.5	7.5	7.5	4.0			7.0	10.5		5.0					
27-28							3.0	7.0	2.5	6.0	5.0	8.5					8.5					6.0	
28-29		2.0				11.0	2.5	6.5	9.0	5.0	2.5	6.0	3.5		2.0		2.5						4.5
29-30			10.0				9.5	5.5	7.5	4.0	7.0	3.5			6.5	2.0		6.0			8.5		9.5

	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	SU CEP	WZ CEP	WZ CEP	XX CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM
MAX	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1	8.8	11.4	11.4	8.5	12.4	11.6	9.6	11.0	11.0	10.0
MIN	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9	9.8	12.0	12.0	9.6	13.2	12.4	10.6	11.6	11.6	10.7
DUR	4	4	3	3	4	4	5	5	4	3	4	4	5	4	3	3	4	5	4	3	3	3	3
TOT				(S)								(S)				(S)						(S)	
0- 1	2.0	6.0	7.5	3.5	5.5								10.5		9.0	4.0			3.5		4.5	2.0	7.5
1- 2			6.5	2.5		6.5			5.5					10.0	5.0	10.0			7.5		3.5	6.5	7.5
2- 3			5.0	9.0							8.5			8.0		6.0				3.5	2.5	5.0	8.0
3- 4			4.0	8.0	9.0	7.5							9.0	5.5	7.0	2.0		6.5		5.5	7.0	4.0	8.5
4- 5		8.5	3.0	7.0	4.0					10.0				3.0	3.0	8.0				7.5	5.5	2.5	
5- 6			2.0	6.0		8.5	7.5	4.0			10.5				9.0	4.0				10.0	4.5	7.0	
6- 7			8.5	5.0				8.0	5.0	4.0		5.0	8.0		5.5	10.5	9.5				3.0	6.0	
7- 8	8.0	2.0	7.5	4.0	7.5	9.5	3.5		11.0							6.5			2.5		2.0	5.0	2.0
8- 9		11.0	6.5	3.0	2.0	2.0									7.5	2.5		3.5	6.5	3.0	6.5	3.5	2.0
9-10	3.5		5.5	1.5		10.5						7.0	6.5		3.5	8.5			10.5	5.5	5.0	2.5	2.5
10-11			4.5	8.5	10.5	3.0								10.5	9.5	4.5				7.5	4.0	7.0	3.0
11-12		4.5	3.5	7.5	5.5				4.5	10.0				8.0	5.5	10.5		10.0		9.5	3.0	5.5	3.5
12-13			2.5	6.5		4.0		3.0	10.5			9.0	5.5	5.5		6.5					7.0	4.5	3.5
13-14			9.0	5.0				7.0		4.0	3.5			3.5	7.5	2.5	9.5				6.0	3.0	4.0
14-15			8.0	4.0	9.0	5.0		10.5							3.5	8.5			2.0	3.0	5.0	2.0	4.5
15-16		7.0	7.0	3.0	3.5								4.0		9.5	4.5			6.0	5.0	3.5	6.5	4.5
16-17	9.5		6.0	2.0		6.0	8.5		4.0		6.0				5.5	10.5		7.5	10.0	7.5	2.5	5.0	5.0
17-18			5.0	8.5					10.0						1.5	6.5				9.5	7.0	4.0	5.5
18-19	5.0		4.0	7.5	7.0	7.0	5.0			10.0			3.0		8.0	3.0	2.0				5.5	3.0	6.0
19-20		9.0	3.0	6.5	2.0			2.0			8.0			11.0	4.0	9.0					4.5	7.5	6.0
20-21			2.0	5.5		8.0		5.5		4.0				8.5	10.0	5.0	10.0			3.0	3.0	6.0	6.5
21-22			8.5	4.5	10.5			9.5	4.0					6.0	6.0	11.0		5.0		5.0	2.0	5.0	7.0
22-23		3.0	7.5	3.5	5.0	9.0			9.5		10.0			3.5	2.0	7.0			5.5	7.0	6.5	3.5	7.5
23-24			6.5	2.5								4.5			8.0	3.0			9.0	9.0	5.5	2.5	7.5
24-25			5.0	9.0		10.0									4.0	9.0					4.0	7.0	8.0
25-26			4.0	8.0	8.5	2.5				10.5					10.0	5.0	2.0				3.0	5.5	8.5
26-27		5.0	3.0	7.0	3.5				3.5			6.5			6.0			2.0		2.5	7.5	4.5	
27-28	6.5		2.0	6.0		3.5	10.0	4.5	9.5	4.5					2.0	7.0	10.0			4.5	6.0	3.5	
28-29			8.5	5.0				8.0					10.5		8.0	3.0				7.0	5.0	2.0	
29-30	2.0		7.5	4.0	6.5	4.5	6.0					8.5		9.0	4.5	9.5		8.5	4.5	9.0	3.5	6.5	2.0

	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	RV CRV	V CRT	Y CYG	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG
MAX	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.0	9.5	7.0	7.0	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8
MIN	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.0	10.2	7.6	7.6	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6
DUR	3	4	4	2	2	5	4	4	4	4	4	4	6	6	5	5	4	4	4	3	4	5	5
TOT															2								
	(S)		(S)		(S)				(S)		(S)			(S)									
0- 1	3.0	5.0		7.0	4.0			4.5						4.0			5.0			6.5	4.5		
1- 2	3.5		6.0	4.0	6.5		9.5		3.5			2.0	10.0			9.0			6.5		3.0		
2- 3	4.0	6.5		6.5	4.0	8.0	3.0	3.0		4.0							2.0	10.5		4.0			
3- 4	4.5	2.5	7.5	3.5	6.5				2.0			5.0		4.0			8.5	9.5		10.5			7.5
4- 5	4.5	8.0	3.0	6.0	3.5		7.0		6.0				9.5					9.0			10.0		
5- 6	5.0	4.0		3.5	6.0			5.5		3.5							5.5	8.0	6.5	8.0	8.5	8.5	
6- 7	5.5		5.0	6.0	3.0				4.5		6.0			4.0				7.5			7.0		
7- 8	6.0	5.5		3.0	5.5		5.0	4.0					9.5				3.0	6.5		5.0	6.0		
8- 9	6.0		6.5	5.5	3.0				3.0	3.5		2.5			9.0		9.0	6.0			4.5	4.5	
9-10	6.5	7.0	2.0	2.5	5.5	5.5	9.0	2.5			6.0			3.5				5.5	6.5	2.5	3.0		
10-11	7.0	3.0	8.0	5.0	2.5		2.5		2.0			5.5	9.5				6.0	4.5		9.0			
11-12	7.5	8.5	3.5	2.5	5.0				5.5	3.0						8.0		4.0					
12-13	7.5	4.5		5.0	2.0		7.0	5.0			5.5			3.5			3.5	3.0		6.5	10.0		
13-14	8.0		5.0	2.0	4.5				4.5				9.5				9.5	2.5	6.5		8.5		
14-15	8.5	6.0		4.5	2.0			3.5		3.0										4.0	7.5		6.5
15-16		2.0	6.5	7.0	4.5		4.5		3.0		5.5	3.0		3.5			7.0			10.0	6.0		
16-17		7.5	2.5	4.0	7.0	3.5		2.0					9.5								4.5		
17-18		3.5	8.5	6.5	4.0		9.0	6.0		2.5							4.0		6.5	7.5	3.0		
18-19	2.0		4.0	4.0	6.5		2.5		5.5		5.0			3.5			10.5						
19-20	2.0	5.0		6.5	3.5			4.5					9.5							5.0			
20-21	2.5		5.5	3.5	6.0		6.5		4.0	2.5							7.5				10.0		
21-22	3.0	6.5		6.0	3.5			3.0			5.0			3.5		7.0			6.5	2.5	8.5		
22-23	3.5	2.0	7.0	3.0	6.0				2.5			3.5	9.0		2.5		5.0			9.0	7.5	9.5	
23-24	3.5	8.0	3.0	5.5	3.0		4.5	2.0		2.0											6.0		
24-25	4.0	4.0	8.5	3.0	5.5			5.5			4.5			3.5			2.0			6.0	4.5		
25-26	4.5		4.5	5.5	2.5		9.0		5.0				9.0				8.5		6.0		3.0	5.5	6.0
26-27	5.0	5.5		2.5	5.0		2.0	4.5		2.0										3.5			
27-28	5.0		6.0	5.0	2.5				3.5		4.5			3.0			5.5			10.0			
28-29	5.5	7.0	2.0	2.0	5.0		6.5	3.0					9.0								10.0		
29-30	6.0	2.5	7.5	4.5	2.0				2.0			4.0					3.0		6.0	7.5	8.5		

	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA	RW GEM	AF GEM	SZ HER	TU HER	UX HER
MAX	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8	9.9	9.9	7.2	9.6	10.2	10.2	10.6	8.9
MIN	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	11.6	11.3	12.0	13.4	9.8
DUR	3	3	3	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	5	4	4	5	5
TOT					(S)			2							1		(S)		1			1	
0- 1	9.5			9.0							10.0			10.5									
1- 2							2.0				5.0	7.0	9.5			3.0					7.5	8.0	
2- 3	7.5		9.0				5.5			7.0				2.0	9.5						3.0		
3- 4		11.0	6.5	3.5			9.0							4.5									
4- 5	6.0	7.5	4.0								9.0	10.5	3.0	7.0		9.0		5.5					
5- 6		4.0			6.0	8.0	2.0	6.5			4.0	5.0		9.5	5.0			10.0			9.5		
6- 7	4.0						5.5														5.0		4.0
7- 8	10.5			8.0			9.0		9.5														
8- 9	2.0									6.0	8.0	8.5	4.5	3.5								3.0	
9-10	9.0				10.0		2.0			10.5	3.0			6.0			6.5						6.5
10-11		7.5	9.5	2.5			5.5		6.5					8.5				5.5	2.0		7.5	9.5	
11-12	7.0	4.5	7.0				8.5							11.0				10.0			3.0		
12-13			4.5		5.0	9.0					7.5	6.5	6.5										8.5
13-14	5.0		2.0				2.0		3.5					2.5									
14-15				7.0			5.0			5.0				5.0		4.0					9.5		
15-16	3.0						8.5			9.5		9.5		7.5							5.0		
16-17	10.0	8.0			9.0						6.5	4.5	8.0	10.0	10.5			5.0					
17-18		4.5														10.0		10.0		2.5		4.5	
18-19	8.0		10.0				5.0																
19-20			7.5		4.0	10.0	8.5				10.5	7.5		4.0	5.5						7.5		
20-21	6.0		5.0							4.0	5.5		10.0	6.5							3.0		2.5
21-22			2.5	6.0						8.5				9.0									
22-23	4.5	8.5					5.0					10.5					7.5	5.0		2.0			
23-24		5.0			8.0		8.5				10.0	5.5	3.0					10.0			9.5		5.0
24-25	2.5					2.5					5.0			3.0							5.0		
25-26	9.0			10.0										5.5									
26-27			10.5		3.0	11.0	5.0					8.5		8.0								6.0	7.0
27-28	7.5		8.0				8.0			7.5	9.0		4.5	10.0		5.0							
28-29		8.5	5.5	5.0							4.0							5.0			7.5		
29-30	5.5	5.5	3.0					7.0						2.0				9.5			3.0		9.5

	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR
MAX	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4	9.5	10.6	10.4	4.8	11.9	9.8	11.2	8.7
MIN	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3	9.5	11.0	11.0	12.7	12.7	10.2	11.7	11.3	5.9	13.3	11.0	13.6	9.5
DUR	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	6	7	4	5	5	4
TOT					(S)				(S)				(S)										
0- 1		7.0					3.0	3.5	7.0	4.5											4.5	7.5	
1- 2								10.0	6.5	6.5										2.0			8.5
2- 3	9.0	2.0						9.0	5.5	8.5	9.0	8.0		5.5		2.5					2.0	6.0	
3- 4								8.5	4.5	10.0			2.5		4.5								
4- 5	2.5							7.5	3.5													5.0	
5- 6								6.5	10.5			10.0				2.5							
6- 7								5.5	9.5				4.5					9.0	7.0			3.5	
7- 8		10.5	2.5		4.0			4.5	8.5		4.5												
8- 9					4.0			4.0	7.5						5.0	2.5				6.5		2.5	
9-10	7.5	5.5	3.5		3.5			10.5	6.5				6.5				2.0	6.0					
10-11					3.5			9.5	6.0		9.5						4.0						
11-12					3.0		2.0	8.5	5.0							2.5				3.5			
12-13					3.0	3.0	3.0	8.0	4.0				8.5					3.0					6.0
13-14					3.0			7.0	11.0			3.5							6.5		10.0		
14-15					2.5			6.0	10.0	4.0						2.5							10.0
15-16					2.5			5.0	9.0	5.5	5.0		10.5								7.5		
16-17	5.5	9.0			2.0			4.0	8.0	7.5		5.5											
17-18					2.0			3.5	7.0	9.5						2.5					5.0		
18-19		4.0			2.0			10.0	6.0		10.0												
19-20								9.0	5.5			7.5		2.5				7.5			2.5		
20-21			2.0			3.0		8.5	4.5							3.0			6.5				
21-22	10.5							7.5	3.5											4.5			
22-23			3.5					6.5	10.5			9.5					4.0	4.5					
23-24	4.0						2.0	5.5	9.5		5.5		3.5			3.0							3.5
24-25			4.5				3.0	4.5	8.5					4.0									
25-26		7.5						3.5	7.5														7.5
26-27								10.5	6.5		10.5		5.5			3.0							
27-28		2.0		4.0				9.5	6.0										6.0				
28-29	9.0			4.0		3.0		8.5	5.0	3.0													
29-30				3.5				8.0	4.0	5.0			7.5	5.0		3.0		9.0					

	U	SX	V508	V839	1010	FT	U	U	TY	AQ	BB	BB	BX	DI	GP	RT	ST	XZ	BETA	Y	U	V505	1968
	OPH	OPH	OPH	OPH	OPH	ORI	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PER	PER	PER	PER	PSC	SGE	SGR	SGR
MAX	5.8	10.5	10.1	8.8	6.2	9.1	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	10.6	9.7	10.6	2.2	9.0	6.4	6.4	12.3
MIN	6.5	11.2	10.7	9.4	7.0	9.7	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0	12.0	13.2	12.7	3.5	12.0	9.1	7.6	13.3
DUR	5	5	3	3	4	4	3	3	6	12	3	3	3	2	4	4	5	4	8	7	6	5	4
TOT										5							1				2		
								(S)				(S)											
0- 1			5.5	2.0				9.5				7.0	7.5	10.5									
1- 2			6.0	7.0	6.0		8.0				4.5	9.0	4.0										2.5
2- 3			7.0	3.0			11.0	6.5			6.5	11.0	7.0		10.5				7.5				5.5
3- 4	3.5		8.0	8.5	6.0			9.5			8.5		3.0	7.0	10.0								8.5
4- 5			8.5	4.0			8.0				10.5	6.0	6.0		9.5	9.5							
5- 6			9.5	9.5	5.5		11.0	6.5				8.0	9.0	10.0	9.0			2.5				5.5	
6- 7			2.0	5.0				9.5		6.5	6.0	10.5	5.0		8.5						2.5	10.0	4.5
7- 8			3.0	10.5	5.0		8.0				8.0		8.0		8.0			9.5					7.5
8- 9	4.0		3.5	6.0			11.0	6.5			10.0	5.5	4.0	6.5	7.0								10.5
9-10			4.5		4.5			9.0				7.5	7.0		6.5								
10-11			5.5	7.0			7.5				5.5	9.5	3.5	10.0	6.0	8.5				8.0			3.0
11-12			6.0	3.0	4.5		10.5	6.0			7.5		6.0		5.5							3.5	6.0
12-13			7.0	8.0				9.0			9.5	5.0	9.0		5.0							8.0	9.0
13-14	5.0		8.0	4.0	4.0		7.5					7.0	5.5	6.0	4.0		10.5						
14-15			8.5	9.5			10.5	6.0			5.0	9.0	8.0					7.5					
15-16			9.5	5.0	3.5			9.0			7.0		4.5	9.5		10.5							4.5
16-17			2.0	10.5			7.5				9.0	4.5	7.5			7.0					6.0		7.5
17-18			3.0	6.0	3.0		10.5	6.0		8.5	11.0	6.5	3.5										10.5
18-19	5.5		3.5					9.0				8.5	6.5	5.5								6.0	
19-20		2.0	4.5	7.0	3.0		7.5				6.0	10.5	9.5									10.5	3.0
20-21			5.5	2.5	10.5		10.5	6.0			8.5		5.5	9.0				2.0					6.0
21-22		3.5	6.0	8.0	2.5			9.0	6.0		10.5	6.0	8.5			9.5	9.0						9.5
22-23			7.0	4.0	10.0		7.5					8.0	4.5					9.0	9.5				
23-24	6.5	5.0	8.0	9.5	2.0		10.5	6.0			5.5	10.0	7.5										
24-25			8.5	5.0	10.0			9.0	8.5		7.5		4.0									4.0	5.0
25-26		6.5	9.5	10.5			7.5				9.5	5.5	6.5	8.5						9.5		8.5	8.0
26-27			2.0	6.0	9.5		10.5	6.0				7.5	9.5								9.5		11.0
27-28		8.0	3.0			2.0		9.0	10.5		5.0	9.5	6.0			8.0							
28-29	7.0		3.5	7.0	9.0		7.5				7.0		8.5										3.5
29-30		9.5	4.5	2.5			10.5	6.0			9.0	5.0	5.0				8.0						6.5

	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TX UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	VV VIR
MAX	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.3	10.3	10.9	8.9	11.4	9.1	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7
MIN	12.1	11.7	11.7	12.5	11.2	12.0	11.7	11.0	11.0	11.9	12.0	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5
DUR	4	4	4	4	3	2	4	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4
TOT				1																			
			(S)						(S)					(S)			(S)						
0- 1			5.0					9.5					5.5	9.5	5.5	5.0	9.0	9.0	10.0				4.0
1- 2	9.0		6.0		10.5			10.0					5.5	9.5		6.5	2.0	4.0	2.5		11.0	2.5	
2- 3	6.0		6.5					11.0					5.5	9.5		8.0	3.5	8.5				3.5	
3- 4	3.5		7.5							10.5			5.5	9.5	7.0	9.5	5.0	3.0	4.0	5.5		5.0	7.0
4- 5		2.0	8.5										5.5	9.5		2.5	6.5	7.5				6.0	4.5
5- 6		3.0	9.0										5.5	9.5		4.0	8.0	2.5	5.5			7.5	2.0
6- 7		3.5	10.0		10.5		1.5			8.5			5.5	9.5	8.5	5.5	9.5	6.5				8.5	
7- 8		4.5	10.5						9.5				5.5	9.5		7.0	2.5		7.0			9.5	7.5
8- 9	10.0	5.0		10.0					10.0				5.5	9.5		8.5	4.0	6.0		3.0	8.5	11.0	5.0
9-10	7.0	6.0							10.5	7.0			5.5	9.5		10.0	5.5	10.0	8.5	8.5			2.5
10-11	4.0	6.5				11.0				11.0			5.5	9.5		3.0	7.5	5.0					
11-12		7.5											5.5	1.5		4.5	9.0	9.5	10.0			2.0	8.0
12-13		8.0	2.0									6.5	6.0	2.0		6.0	2.0	4.5	2.5			3.0	5.0
13-14		9.0	3.0							9.0			6.0	2.0		7.5	3.5	8.5				4.5	2.5
14-15		10.0	3.5					9.5					6.0	2.0		9.0	5.0	3.5	4.0	5.5		5.5	
15-16	11.0	10.5	4.5				2.0	10.0				7.0	6.0	2.0		2.0	6.5	8.0			6.0	6.5	8.0
16-17	8.0		5.0					10.5		7.5			6.0	2.0		3.5	8.0	2.5	5.5			8.0	5.5
17-18	5.0		6.0										6.0	2.0		5.0	9.5	7.0				9.0	3.0
18-19	2.0		6.5									7.5	6.0	2.0		6.5	2.5	2.0	7.0			10.5	
19-20			7.5										6.0	2.0		8.5	4.0	6.0		3.0			
20-21		2.0	8.0							9.5			6.0	2.0		10.0	5.5	10.5	8.5	8.5			6.0
21-22		3.0	9.0						9.5			8.0	6.0	2.0		3.0	7.0	5.5					3.5
22-23		3.5	9.5						10.0				6.0	2.0		4.5	8.5	10.0	9.5		3.5	2.5	
23-24	8.5	4.5	10.5						10.5	8.0			6.0	2.0		6.0	10.0	4.5	2.0			3.5	
24-25	6.0	5.0					2.0					8.0	6.0	2.0		7.5	3.0	9.0			10.5	5.0	6.5
25-26	3.0	6.0											6.0	2.0		9.0	4.5	4.0	3.5	5.5		6.0	3.5
26-27		6.5											6.0	2.0		2.0	6.0	8.0				7.0	
27-28		7.5								10.0		8.5	6.0	2.0		3.5	7.5	3.0	5.0			8.5	
28-29		8.0	2.0								10.5		6.0	2.0		5.0	9.0	7.5				9.5	6.5
29-30		9.0	2.5					10.0			9.5		6.0	2.0		6.5	2.5	2.0	6.5			11.0	4.0

	AG	AH	AH	AK	AW	AW	AZ	AZ	BH	Z	AW	AX	AY	BE	BO	BS	BT	BU	CD
	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	11.0	9.9	10.4	11.0	11.8	10.6	11.5
MIN	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.5	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	4	4	4	4	3	3	3	3	4	6	5	5	4	5	4	3	3	3	4
TOT			(S)			(S)		(S)											
0- 1		5.0			4.5		7.0	3.0	2.5					3.5		4.0		7.0	8.0
1- 2	1.5		5.5		6.0		8.5	4.0			6.5					3.0		10.0	
2- 3		6.0			7.5	3.0		5.5					8.0			2.0			9.5
3- 4			6.5	4.0		4.5	2.5	6.5						6.0				3.0	
4- 5	7.0	7.0	2.0		2.0	6.0	3.5	7.5	4.5	5.5								6.5	10.5
5- 6		2.5	7.5		3.5	7.5	4.5				7.0				9.5	10.0	5.0	10.0	3.0
6- 7	5.0		3.0		5.0		6.0				2.5			8.5		8.5	8.0		
7- 8		3.5			6.5	2.0	7.0	3.0					3.5		8.5	7.5		3.0	4.0
8- 9	3.5		4.0		8.0	3.5	8.0	4.0	6.5			2.0				6.5		6.0	
9-10		4.5		3.5		5.0		5.0	2.0	3.0	8.0				7.0	5.0		9.5	5.5
10-11			5.0	8.0	2.5	6.5	2.0	6.5			3.0	3.0				4.0			
11-12		5.5			3.5	8.0	3.5	7.5							6.0	3.0		2.5	6.5
12-13			5.5		5.0		4.5	8.5	8.5			3.5				1.5		5.5	
13-14	7.0	6.0			6.5	2.5	5.5		4.0		8.5				4.5		4.5	9.0	8.0
14-15		1.5	6.5		8.0	4.0	7.0	2.5			4.0	4.0	9.5	2.5		11.0	8.0		
15-16	5.0	7.0	2.0	2.5		5.5	8.0	4.0							3.0	9.5			9.0
16-17		2.5	7.5	7.0	2.5	7.0		5.0				4.5				8.5		5.5	
17-18	3.5		3.0		4.0	8.5	2.0	6.0	6.0		9.5			5.0	2.0	7.5		8.5	10.5
18-19		3.5			5.5		3.0	7.5			5.0	5.0				6.0			2.5
19-20			4.0		7.0	3.0	4.5	8.5					5.0			5.0			
20-21		4.5				4.5	5.5					6.0		7.5		4.0		5.0	4.0
21-22			5.0	1.5		6.0	6.5	2.5	8.0	9.5	10.0					3.0	4.0	8.0	
22-23	6.5	5.5		6.5	3.0	7.5	8.0	3.5	3.5		5.5	6.5					7.5		5.0
23-24			6.0		4.5			5.0						10.0					
24-25	5.0	6.5			6.0	2.0	2.0	6.0				7.0				10.5		4.5	6.5
25-26		2.0	6.5		7.5	3.5	3.0	7.0								9.5		8.0	
26-27	3.5	7.0	2.5			5.0	4.0	8.5	5.5	7.5	6.5	7.5	11.0			8.5			7.5
27-28		2.5	7.5		2.0	6.5	5.5									7.5			
28-29			3.0	5.5	3.5	8.0	6.5	2.5				8.0		2.0		6.0		4.0	9.0
29-30		3.5			5.0		8.0	3.5								5.0	4.0	7.5	

AAVSO Eclipsing Binary Ephemeris for July 2015 all times in U.T.

	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	RY AQR	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	8.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	10.1	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1
DUR	3	11	8	4	3	3	3	4	4	3	4	4	5	3	3	7	3	3	7	4	4	3	3
TOT		2																	3				
							(S)		(S)									(S)					(S)
0- 1	5.5				9.5	6.5	2.5	3.0		9.0	9.5				7.5		7.5					7.0	
1- 2		10.0		5.0		6.5	2.5	2.5		7.0				6.0			8.0	2.0					7.5
2- 3	3.0					6.5	2.5	2.0		5.5	5.5			9.0			8.5	2.5				7.5	
3- 4	9.0			7.0		6.0	2.0	2.0		3.5	11.0	4.5					8.5	2.5					8.0
4- 5			11.0		11.0	6.0	2.0			1.5		4.5					9.0	3.0	4.5			8.5	
5- 6	6.5			9.0		6.0	2.0			11.0	7.0	5.0	11.0				9.5	3.0		11.0			9.0
6- 7						6.0	2.0			9.5		5.0		6.0	8.5		9.5	3.5				9.0	
7- 8	3.5		10.0		4.5	6.0	2.0			7.5		5.5	10.0	9.0		3.0	10.0	4.0		7.0	3.0		9.5
8- 9	10.0			4.0		5.5	9.5			5.5	8.0	5.5					10.5	4.0			5.5	10.0	
9-10						5.5	9.5			4.0		6.0	9.0			6.0	10.5	4.5		3.5	8.0		10.5
10-11	7.0		9.5	6.0		5.5	9.5			2.0		6.0		3.5			11.0	5.0			11.0	10.5	5.5
11-12					6.0	5.5	9.5		11.0		9.0	6.5	8.5	6.5		9.5		5.0				6.0	11.0
12-13	4.5			8.0		5.0	9.0		10.5	9.5		6.5		9.0	9.0			5.5					6.5
13-14	10.5		9.0			5.0	9.0		10.5	8.0	5.0	7.0	7.5		6.0			6.0				7.0	
14-15	1.5			10.0		5.0	9.0		10.0	6.0	10.5	7.0						6.0	9.0				7.0
15-16	8.0				7.5	5.0	9.0		9.5	4.5		7.5	6.5	3.5				6.5				7.5	
16-17			8.0			5.0	9.0		9.5	2.5	6.5	7.5		6.5				7.0					8.0
17-18	5.0			5.0		4.5	8.5		9.0			8.0	6.0	9.0				7.0			2.0	8.5	
18-19						4.5	8.5		8.5	10.0		8.0			10.0			7.5		8.5	4.5		8.5
19-20	2.5		7.5	7.0	9.5	4.5	8.5		8.5	8.5	7.5	8.5	5.0		7.0			8.0			7.0	9.0	
20-21	8.5					4.5	8.5		8.0	6.5		8.5		4.0			2.0	8.0		5.0	9.5		9.5
21-22				9.0		4.5	8.5		7.5	5.0		9.0	4.5	6.5			2.5	8.5	3.5			9.5	
22-23	6.0		7.0			4.0	8.0		7.5	3.0	9.0	9.0		9.0		2.0	2.5	9.0					10.0
23-24						4.0	8.0		7.0			9.5	3.5				3.0	9.0				10.5	
24-25	3.5			4.0		4.0	8.0		6.5	10.5	4.5	9.5			11.0	5.5	3.5	9.5				6.0	11.0
25-26	9.5		6.5			4.0	8.0		6.5	9.0	10.0	10.0		4.0	8.0		3.5	10.0				11.0	6.0
26-27		3.5		6.0	4.5	4.0	8.0		6.0	7.0		10.0		6.5		9.0	4.0	10.0				6.5	
27-28	6.5					3.5	7.5		6.0	5.0	6.0	10.5		9.0			4.5	10.5					7.0
28-29			5.5	8.0		3.5	7.5		5.5	3.5		10.5					4.5	10.5			3.5	7.5	
29-30	4.0					3.5	7.5		5.0			11.0					5.0	11.0		10.5	6.0		7.5
30-31	10.0	6.5		10.0	6.0	3.5	7.5		5.0	11.0	7.0			4.0			5.5				8.5	8.0	

	WW AUR	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	RW CAP
MAX	5.7	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	9.8
MIN	6.4	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	10.8
DUR	5	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	5
TOT		(S)		(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)	
0- 1			1.5					10.5				5.0	6.5	2.5	4.5	8.0			11.0	10.0	9.5		
1- 2	10.0										8.0	4.5	5.5	9.0	1.5	5.5					4.0		
2- 3											7.5	3.5	4.0	8.0	6.5	2.5			5.5			7.5	
3- 4								9.5	10.5		7.0	3.0	3.0	7.0	3.5	7.0	3.5		10.0		11.0	2.0	
4- 5							9.5				6.0	2.5	2.0	5.5	8.0	4.5				9.5	5.5		
5- 6											5.5		8.5	4.5	5.5	2.0		3.0	4.5			9.0	
6- 7											5.0		7.0	3.5	3.0	6.5			9.0			3.0	3.5
7- 8											4.5	8.0	6.0	2.0	7.5	4.0					6.5		
8- 9						8.5				10.0	3.5	7.5	5.0	8.5	5.0	8.5	3.0	10.5	4.0	9.0		10.0	
9-10							9.0				3.0	7.0	3.5	7.5	2.5	6.0			8.5			4.5	
10-11					10.0						2.5	6.0	2.5	6.5	7.0	3.5					8.0		
11-12			11.0									5.5	9.0	5.0	4.0	8.0			3.0		2.5		
12-13												5.0	7.5	4.0	9.0	5.0			7.5	9.0		6.0	
13-14				11.0				10.5	9.5		8.0	4.5	6.5	3.0	6.0	2.5	3.0				9.5		
14-15							8.5				7.5	3.5	5.5	9.0	3.5	7.0			2.0		4.0		
15-16			10.5								7.0	3.0	4.0	8.0	8.0	4.5			6.5			7.5	
16-17								9.5			6.0	2.5	3.0	7.0	5.5	2.0			11.0	8.5	11.0		7.5
17-18				10.5							5.5		2.0	5.5	3.0	6.5					5.0		
18-19										9.0	5.0		8.5	4.5	7.5	4.0	3.0	8.5	6.0			8.5	
19-20			10.5				8.0				4.5	8.0	7.0	3.5	5.0	8.5			10.5			3.0	
20-21											3.5	7.5	6.0	2.0	2.0	6.0				8.0	6.5		
21-22				10.0							3.0	7.0	5.0	8.5	6.5	3.0			5.0			10.0	
22-23											2.5	6.0	3.5	7.5	4.0	7.5			9.5			4.5	
23-24			10.0						8.5			5.5	2.5	6.5	8.5	5.0	2.5				8.0		2.5
24-25												5.0	9.0	5.0	6.0	2.5			4.0	7.5	2.0		
25-26		10.0									8.0	4.0	8.0	4.0	3.5	7.0			8.5			5.5	
26-27								10.5			7.5	3.5	6.5	3.0	8.0	4.5					9.0		
27-28											7.0	3.0	5.5	9.5	5.5	2.0			3.5		3.5		
28-29										8.0	6.0	2.5	4.5	8.0	2.5	6.5	2.5	6.5	8.0	7.5		7.0	
29-30								9.5			5.5		3.0	7.0	7.5	3.5					10.5		
30-31		11.0							11.0		5.0		2.0	6.0	4.5	8.0			2.5		5.0		

	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	V364	V364	V375	U	SU	WZ	WZ	XX	DK	DL	DV
	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP
MAX	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1	6.7	8.8	11.4	11.4	8.5	12.2	12.4	11.6
MIN	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9	9.8	9.8	12.0	12.0	9.6	14.2	13.2	12.4
DUR	4	4	4	4	3	3	4	4	5	5	4	3	4	4	5	4	4	3	3	4	4	5	4
TOT																2							
						(S)								(S)					(S)				
0- 1	2.0			7.5	6.5	3.0							3.0				6.5	10.5	5.5				8.5
1- 2					5.5	2.0		5.5	2.5		3.0				9.0		4.0	6.5					
2- 3					4.5	8.5	10.0				9.0	10.5		10.5				2.5	7.5	2.5			
3- 4					3.5	7.5	5.0	6.5					5.0					8.5	3.5				
4- 5	8.5	4.0		10.0	2.5	6.5				3.0		4.5			8.0			4.5	9.5	10.5		6.0	
5- 6		8.5			9.0	5.5		7.5		7.0								10.5	5.5		11.0		
6- 7			8.0		8.0	4.0	8.0			11.0	2.5		7.0					6.5			10.5		4.0
7- 8	5.0			3.5	7.0	3.0	3.0	8.5			8.5			2.0	6.5			2.5	7.5		10.5		8.0
8- 9			3.5		6.0	2.0			11.0								9.0	8.5	3.5		10.0		
9-10					5.0	8.5		9.5				10.5	9.5			11.0	7.0	4.5	9.5	2.5	9.5	3.0	
10-11		3.5			4.0	7.5	6.5	2.0	7.5					4.0	5.5		4.5	11.0	6.0		9.5		
11-12		8.0		6.0	3.0	6.5		10.5		2.0	2.0	4.5					2.0	7.0	2.0	11.0	9.0		
12-13					2.0	5.5		3.0	3.5	6.0	8.0							3.0	8.0		8.5	9.5	
13-14					8.5	4.5	10.0			9.5				6.0	4.0			9.0	4.0		8.0		3.0
14-15	8.0				7.5	3.5	4.5	4.0								11.0		5.0	10.0		8.0		7.0
15-16			9.5	8.5	6.5	2.5												11.0	6.0		7.5		11.0
16-17		3.0			5.5	9.0		5.0			1.5	10.5		8.0	2.5			7.0	2.0	3.0	7.0		
17-18	4.0	7.5	5.0		4.0	8.0	8.0				7.5		2.5				9.5	3.0	8.0		7.0	7.0	
18-19				2.0	3.0	7.0	3.0	6.0				4.5					7.0	9.0	4.0	11.0	6.5		
19-20				11.0	2.0	6.0				4.5				10.0		10.5	4.5	5.0	10.0		6.0		
20-21					9.0	5.0		7.0		8.5			4.5				2.5		6.0		6.0		2.5
21-22	10.5				7.5	4.0	6.0		8.5									7.0	2.0		5.5		6.5
22-23		2.5		4.5	6.5	3.0		8.0			7.0							3.5	8.5		5.0	4.5	10.5
23-24		7.0			5.5	2.0			4.5			10.5	6.5					9.5	4.5	3.5	5.0		
24-25	7.0		11.0		4.5	8.5	9.5	9.0								10.0		5.5	10.5		4.5		
25-26					3.5	7.5	4.5					4.5							6.5		4.0	10.5	
26-27			6.5	7.0	2.5	6.5		10.0		3.5			8.5		10.5		10.0	7.5	2.5		4.0		
27-28	3.5				9.0	5.5		2.0		7.5	7.0			3.0			7.5	3.5	8.5		3.5		2.0
28-29		2.0	2.0		8.0	4.0	7.5	11.0		11.0							5.0	9.5	4.5		3.0		6.0
29-30		6.5			7.0	3.0	2.5	3.0					10.5		9.0	10.0	2.5	5.5	10.5		3.0		9.5
30-31				9.5	6.0	2.0						10.5		5.5					6.5	3.5	2.5	8.0	

	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	V CRT	Y CYG	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG
MAX	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.5	7.0	7.0	9.3	9.9	10.7	11.8	9.4	11.0
MIN	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.2	7.6	7.6	11.8	13.2	12.0	12.8	10.5	11.8
DUR	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	6	6	5	5	4	4	4	3
TOT																		2					
			(S)		(S)		(S)		(S)				(S)	(S)			(S)						
0- 1	11.0	2.5	5.5	2.0	6.5		3.5	2.0	4.5					4.0			3.0			9.0			
1- 2		7.0	4.0	2.5	6.5	4.0		4.5			4.5					9.0		6.0	5.5				5.0
2- 3	2.5	5.5	3.0	3.0			5.0		4.0											6.5			11.0
3- 4	4.5	4.5		3.5		5.5		4.0		9.5	8.5	4.0		4.0			3.0				11.0	6.0	2.5
4- 5	6.5	3.5	6.0	3.5			6.5		4.0		2.0		3.5		2.0	9.0				3.5	10.0		8.5
5- 6	9.0	2.0	5.0	4.0			2.5	3.5	6.5			2.5								9.5	9.5		
6- 7	11.0	6.5	3.5	4.5		3.0		6.0	3.5		6.5		2.0	3.5			3.0				8.5		6.0
7- 8		5.5	2.5	5.0			4.0	3.5	6.0							9.0				7.0	8.0	6.0	
8- 9	2.0	4.0	7.0	5.0		4.5		6.0	3.0												7.0		3.5
9-10	4.5	3.0	6.0	5.5			5.5	3.0	5.5		4.0			3.5			3.0			4.0	6.5		9.5
10-11	6.5		4.5	6.0	2.0	6.0		5.5	3.0	7.5		3.5				8.5		9.5		10.5	5.5		
11-12	8.5	6.0	3.5	6.5	2.0	2.0		2.5	5.5		8.5		3.0		2.5				4.5		5.0	6.0	7.0
12-13	10.5	5.0	2.0	6.5	2.5		2.5	5.0	2.5		2.0	2.0		3.0			3.0			7.5	4.0		
13-14		4.0	6.5		3.0	3.5		2.5	5.0							8.5					3.5		4.5
14-15	2.0	2.5	5.5		3.5		4.5	5.0	2.0		6.0									5.0	2.5		11.0
15-16	4.0		4.0		3.5	5.0		2.0	4.5					2.5			2.5			11.0	2.0	6.0	2.0
16-17	6.0	6.0	3.0		4.0		6.0	4.5	2.0				4.0			8.5				2.0			8.5
17-18	8.5	4.5	2.0		4.5	6.5			4.5	5.0	4.0	3.5								8.5			
18-19	10.5	3.5	6.0		5.0	2.5		4.0					2.5	2.5	3.0		2.5						6.0
19-20		2.0	5.0		5.0		3.0		4.0		8.0	2.0				8.5				5.5		6.0	
20-21		6.5	4.0		5.5	4.0		4.0															3.5
21-22	4.0	5.5	2.5	2.0	6.0		4.5	6.5	3.5					2.0			2.5		3.5	3.0			9.5
22-23	6.0	4.0		2.5	6.5	5.5		3.5	6.0		6.0					8.5				9.0			
23-24	8.0	3.0	6.0	2.5	6.5		6.0	6.0	3.5				3.5									6.0	7.0
24-25	10.0	2.0	4.5	3.0			2.0	3.0	6.0	2.5	10.0	3.0		2.0			2.5	2.5	11.0	6.5			
25-26		6.5	3.5	3.5		3.0		5.5	3.0		3.5		2.0			8.0							4.5
26-27		5.0	2.0	4.0			3.5	3.0	5.5											3.5			10.5
27-28	3.5	4.0	6.5	4.0		4.5		5.5	2.5		8.0						2.5			9.5		6.0	2.0
28-29	5.5	2.5	5.5	4.5			5.0	2.5	5.0							8.0							8.0
29-30	8.0		4.5	5.0		6.0		5.0	2.5			4.0								7.0			
30-31	10.0	6.0	3.0	5.5		1.5	6.5	2.0	5.0		5.5		3.5				2.0						5.5

	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA	YY ERI	YY ERI
MAX	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8	9.9	9.9	7.2	8.4	8.4
MIN	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	9.1	9.1
DUR	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	3	3
TOT											2							1					
								(S)												(S)			(S)
0- 1	7.5				2.0			7.0		4.5		9.0			6.5		4.5						11.0
1- 2	6.0			3.5					3.5	8.0				8.0		6.5	7.0						10.0
2- 3	4.5			10.5			9.0						2.0	3.0			9.0			2.5			
3- 4	3.0							2.0				6.0	6.5		10.0			6.5					
4- 5				8.5	9.0					4.5	2.5		11.0		4.5						4.5		
5- 6					5.5	8.5	4.0			8.0				7.5		8.0	3.5			8.5	9.5	10.5	
6- 7	10.0		5.5	6.5	2.0	6.0						3.0		2.5			6.0	2.0					
7- 8	9.0					3.5		6.0							8.0		8.0						
8- 9	7.5			4.5					4.5	4.5					2.5		10.5						
9-10	6.0	10.0					8.0			8.0			5.5	6.5		10.0							11.0
10-11	4.5			2.5	9.5								10.0		11.0		2.5		6.0		4.5		10.0
11-12	3.0			9.5	6.0			10.0							6.0		5.0				9.5		
12-13	2.0	6.5			2.5		3.0			4.5				10.5		3.0	7.0						
13-14				7.5		9.0				7.5				5.5			9.5						
14-15	10.0		11.0			6.5		5.0		11.0					9.0							10.5	
15-16	9.0	2.5		5.5		4.0			5.5				4.5		4.0					3.5		9.5	
16-17	7.5				9.5		7.0			4.0			9.0	10.0		5.0	4.0				4.5		
17-18	6.0		5.0	4.0	6.0					7.5				5.0			6.0	7.5			9.0		
18-19	4.5			10.5	3.0			9.0		11.0					7.0		8.5			9.5			11.0
19-20	3.0			2.0			2.0								2.0		11.0						10.0
20-21	2.0			8.5						4.0				9.0		6.5		2.5					
21-22						9.5		4.0		7.5			3.5	4.0	10.0		2.5						
22-23	10.5			7.0	10.0	7.0			6.5	11.0			8.0		5.0		5.0				4.5		
23-24	9.0				6.5	4.5	6.0				8.0	8.0					7.5		7.0		9.0	10.5	
24-25	7.5			5.0	3.0	2.0				4.0				8.0		8.5	10.0					9.5	
25-26	6.0		10.5					8.0		7.5				3.0	8.0								
26-27	4.5	11.0		3.0						11.0		5.0			3.0		1.5						
27-28	3.0			10.0			10.5						2.0				4.0						11.0
28-29	2.0		4.0		10.0			3.0		4.0	3.5		7.0	7.5		10.0	6.5			4.5	4.0		10.0
29-30		7.0		8.0	7.0	10.0			7.5	7.0		2.0		2.5	6.0		9.0				9.0		
30-31	10.5				3.5	7.5	5.0			10.5													

AAVSO Eclipsing Binary Ephemeris for July 2015 all times in U.T.
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	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	RR LEP	SS LIB	DELT LIB	RY LYN
MAX	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4	9.5	10.6	10.2	10.4	4.8	11.9
MIN	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	10.0	10.0	12.3	9.5	11.0	11.0	12.7	12.7	10.2	11.7	10.9	11.3	5.9	13.3
DUR	4	4	5	5	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	4	6	7	4
TOT			1																				
									(S)		(S)				(S)								
0- 1					2.5					7.0	3.0	7.0		2.5									
1- 2										6.0	2.0	8.5	6.0										
2- 3		9.5								5.0	9.0	10.5			10.0			3.0			6.5		
3- 4		5.0					1.5			4.0	8.0			4.5									
4- 5						5.5				3.5	7.0		11.0									5.5	2.5
5- 6			8.0		7.5					2.5	6.0						2.5	3.0			3.5		
6- 7										9.0	5.5			6.5									
7- 8		7.5		3.5				2.0		8.0	4.5												
8- 9		3.0						2.0		7.5	3.5							3.0					
9-10										6.5	2.5		6.5	8.5									
10-11				6.0						5.5	9.5				3.0		3.0						
11-12		9.5				9.0				4.5	8.5							3.0				5.0	
12-13		5.0	3.0		6.0					3.5	7.5	2.5		10.5									
13-14				8.0		4.0				3.0	6.5	4.0			5.0								
14-15	11.0		9.5							2.0	5.5	6.0	2.0					3.0					3.5
15-16										8.5	5.0	8.0									5.0		
16-17		7.0		10.5						8.0	4.0	9.5			7.0	2.0							
17-18		3.0								7.0	3.0		7.0					3.0					
18-19							2.5			6.0	2.0									11.0	2.0	4.5	10.5
19-20					4.5					5.0	9.0				9.0								
20-21		9.5				7.5				4.0	8.0			3.5				3.0					
21-22		5.0	4.5	2.0						3.0	7.0					3.0							
22-23						2.5				2.5	6.0		2.5		11.0								
23-24			11.0							9.0	5.0			5.5				3.0					
24-25				4.5	9.5					8.0	4.5												4.5
25-26		7.0								7.5	3.5		7.5								6.5	4.0	
26-27		3.0			3.0					6.5	2.5			7.5				3.0					
27-28				6.5						5.5	9.5	3.5			2.0								
28-29									2.0	4.5	8.5	5.0							3.0		3.5		
29-30		9.5				6.0				3.5	7.5	7.0		9.5				3.0					
30-31		5.0	6.5	9.0						2.5	6.5	9.0	3.0		4.0								

	UZ LYR	EW LYR	FL LYR	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	U PEG	U PEG	TY PEG	AQ PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG
MAX	9.8	11.2	8.7	5.8	10.5	10.1	8.8	6.2	10.3	9.5	9.5	11.2	10.5	9.1	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2
MIN	11.0	13.6	9.5	6.5	11.2	10.7	9.4	7.0	13.3	10.2	10.2	12.4	13.2	9.7	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0
DUR	5	5	4	5	5	3	3	4	4	3	3	5	3	4	3	3	6	12	3	3	3	2	4
TOT																		5					
											(S)					(S)				(S)			
0- 1	10.5					5.5	8.0	8.5							4.5	9.0			2.5	7.0	8.0	8.0	
1- 2						6.0	4.0								7.5				4.5	9.0	4.0		
2- 3	8.0					7.0	9.0	8.5							10.5	6.0			6.5	11.0	7.0		
3- 4		10.5		8.0		8.0	5.0								4.5	9.0			8.5	4.5	3.0	4.5	
4- 5	5.5					8.5	10.5	8.0							7.5				10.5	6.5	6.0		
5- 6		9.0				9.5	6.0				10.5				10.5	6.0			4.0	8.5	2.5	7.5	
6- 7	3.0		5.0			2.0		7.5							4.5	9.0			6.0	10.5	5.0		
7- 8		8.0				3.0	7.0								7.5				8.0	3.5	8.0	11.0	
8- 9			9.0	8.5		3.5	2.5	7.0							10.5	6.0			10.0	5.5	4.5	4.0	
9-10		7.0				4.5	8.0			11.0					4.5	9.0			3.5	8.0	7.0		
10-11						5.5	3.5	7.0							7.5				5.5	10.0	3.5	7.5	
11-12		5.5				6.0	9.0					11.0			10.5	6.0			7.5	3.0	6.5		
12-13						7.0	5.0	6.5				10.0			4.5	9.0			9.5	5.0	2.5	10.5	10.5
13-14		4.5		9.5		7.5	10.5								7.5				3.0	7.0	5.5	3.5	10.0
14-15						8.5	6.0	6.0							10.5	5.5			5.0	9.0	8.5		9.5
15-16		3.0				9.5									4.0	8.5		2.5	7.0	2.5	4.5	7.0	9.0
16-17						2.0	7.0	5.5			10.5				7.0				9.0	4.5	7.5		8.5
17-18		2.0	2.5			3.0	2.5								10.0	5.5			11.0	6.5	3.5	10.0	8.0
18-19				10.0		3.5	8.0	5.5							4.0	8.5			4.5	8.5	6.5		7.0
19-20	8.5		6.5			4.5	3.5								7.0				6.5	10.5	3.0		6.5
20-21				2.5		5.0	9.0	5.0							10.0	5.5			8.5	4.0	5.5	6.5	6.0
21-22	6.0		11.0			6.0	5.0								4.0	8.5			10.5	6.0	2.0		5.5
22-23					2.0	7.0	10.0	4.5							7.0		4.5		4.0	8.0	5.0	9.5	5.0
23-24	3.5					7.5	6.0						10.5		10.0	5.5			6.0	10.0	7.5		4.5
24-25					3.5	8.5		4.0							4.0	8.5			8.0	3.5	4.0		3.5
25-26				3.0		9.5	7.0							10.5	7.0		6.5		10.0	5.5	7.0	6.0	3.0
26-27					5.0	2.0	2.5	4.0							10.0	5.5		5.0	3.0	7.5	3.0		2.5
27-28						2.5	8.0				11.0				4.0	8.5			5.0	9.5	6.0	9.5	
28-29					6.5	3.5	3.5	3.5							7.0		8.5		7.5	3.0	2.0		
29-30						4.5	9.0								10.0	5.5			9.5	5.0	5.0		
30-31			4.0	4.0	8.0	5.0	4.5	3.0	11.0						4.0	8.5			2.5	7.0	8.0	5.5	

	Z	RT	RV	ST	XZ	BETA	Y	U	V505	1968	AO	CC	CC	RW	RZ	TY	WY	EQ	EQ	V	X	RV	W
	PER	PER	PER	PER	PER	PER	PSC	SGE	SGR	SGR	SER	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA
MAX	9.9	10.6	10.3	9.7	10.6	2.2	9.0	6.4	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.3	10.3	10.9	8.9	11.4	9.1
MIN	12.4	12.0	12.7	13.2	12.7	3.5	12.0	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	11.0	11.0	11.9	12.0	12.5	9.9
DUR	6	4	8	5	4	8	7	6	5	4	4	4	4	4	3	2	4	3	3	4	4	4	3
TOT	2			1				2						1									
													(S)						(S)				
0- 1					10.5				2.0	9.5	9.5		3.5					10.5		8.5	9.0	9.0	6.0
1- 2	4.5								6.5		6.5		4.5		9.0			11.0			8.5		6.0
2- 3		10.5							10.5	2.0	4.0		5.0				9.5		7.5		7.5		6.0
3- 4		6.5						3.5		5.0			6.0	8.0	11.0				8.0	6.5	7.0	9.0	6.0
4- 5	6.0									8.0			6.5						9.0	11.0	6.5		6.0
5- 6													7.5						9.5		5.5		6.5
6- 7												2.0	8.0		8.5				10.0	5.0		9.5	6.5
7- 8	7.5			6.5	8.5				4.0	4.0		2.5	9.0			9.5			10.5	9.0			6.5
8- 9		9.0							8.5	7.0	7.5	3.5			10.5				11.0				6.5
9-10		5.5								10.0	4.5	4.0						7.5				10.0	6.5
10-11	8.5						11.0					5.0						8.0		7.0			6.5
11-12										2.5		6.0					9.5	8.5					6.5
12-13						11.0				5.5		6.5						9.5				10.5	6.5
13-14	10.0							7.0	2.0	8.5		7.5			10.5			10.0		5.5			6.5
14-15		7.5			6.0		5.5		6.5			8.0	2.0	10.0				10.5		9.5			6.5
15-16					10.0	8.0			11.0		8.5	9.0	2.5					11.0				10.5	6.5
16-17										4.0	5.5		3.5						7.5			4.5	6.5
17-18										7.0	2.5		4.0						8.0	7.5			6.5
18-19													5.0		10.0				8.5			11.0	6.5
19-20		10.0											5.5						9.0			5.0	6.5
20-21		6.5							4.5	2.5			6.5				10.0		10.0	6.0			6.5
21-22									9.0	5.5			7.5			9.5			10.5	10.0			6.5
22-23					7.5					9.0	9.0	2.0	8.0						11.0			5.5	6.5
23-24								10.5			6.5	2.5	9.0		9.5								6.5
24-25											3.5	3.5						8.0		8.5			6.5
25-26		8.5								4.5		4.0						8.5				6.0	6.5
26-27		5.0							2.5	7.5		5.0						9.0					6.5
27-28									7.0			5.5						10.0		6.5			6.5
28-29			10.5	11.0								6.5			9.5			10.5		10.5		6.0	7.0
29-30					5.5		7.0			3.0		7.5					10.0	11.0					7.0
30-31		11.0	10.0		9.0			5.0		6.0	7.0	8.0	2.0							4.5			7.0

	W	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	AG	AH	AH	AK	AW	AW	AZ	AZ	BH	Z	AW	AX	AY
	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VUL	VUL	VUL	VUL
MAX	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	11.0
MIN	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.5	12.9
DUR	3	6	3	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5	5	4
TOT																							
	(S)			(S)									(S)			(S)		(S)					
0- 1	2.0		8.0	4.0	6.5		3.0						4.0			2.5		4.5			7.0	9.0	
1- 2	2.0		9.5	5.5	11.0	8.0		8.0				4.5				4.0		6.0	3.5	5.5	2.5		6.5
2- 3	2.0		2.5	7.0	6.0				2.0				5.0			5.5	3.0					9.5	
3- 4	2.0		4.0	8.5	10.0	9.5			3.0	4.5	5.0	5.5			2.5		4.0						
4- 5	2.0		5.5	10.0	5.0	2.0			4.0	2.0				5.0	4.0		5.0				8.0	10.0	
5- 6	2.5		7.0	3.0	9.5				5.5		3.0				5.5		6.5	2.0	5.5		3.0		
6- 7	2.5		8.5	4.5	4.0	3.5	5.5		6.5			2.0				2.5		3.5		3.0		10.5	2.5
7- 8	2.5		10.0	6.0	8.5		11.0		8.0	5.0			2.5			4.0		4.5					
8- 9	2.5		3.5	7.5	3.5	5.0		6.0	9.0	2.0		3.0				5.5		5.5			8.5		
9-10	2.5		5.0	9.0	7.5				10.0				3.5		3.0		2.5				4.0		
10-11	2.5		6.5	2.0	2.5	6.5						3.5		4.0	4.5		4.0		3.0				
11-12	2.5		8.0	3.5	7.0		3.0			5.0			4.0		6.0		5.0						
12-13	2.5		9.5	5.0	2.0	8.0				2.5	5.0	4.5				3.0	6.5	2.0			9.5		
13-14	2.5	2.5	2.5	6.5	6.0				2.5				5.0			4.5		3.0			5.0		8.0
14-15	2.5		4.0	8.0	10.5	9.5			3.5		3.0	5.5			2.0	6.0		4.5	5.0				
15-16	2.5		5.5	9.5	5.5	2.0		3.5	5.0	5.5					3.5			5.5					
16-17	2.5	4.0	7.0	2.5	9.5	11.0			6.0	3.0				3.5	5.0		2.5	7.0			10.0		
17-18	2.5		8.5	4.0	4.5	3.5	5.5	10.5	7.0			2.0			6.5	2.0	3.5				5.5		
18-19	2.5		10.0	6.0	9.0		11.0		8.5				2.5			3.5	5.0			10.0			4.0
19-20	2.5	5.5	3.0	7.5	3.5	5.0			9.5	6.0		3.0				5.0	6.0	2.0	2.5				
20-21	2.5		4.5	9.0	8.0				11.0	3.5			3.5		2.5			3.0			11.0		
21-22	2.5		6.0	2.0	3.0	6.5					5.0	4.0			4.0			4.0			6.5		
22-23	2.5	7.0	7.5	3.5	7.0		3.0						4.0	2.5	5.5			5.5					
23-24	2.5		9.0	5.0	2.0	8.0			1.5	6.5	3.0	4.5				2.5	2.5	6.5	4.5	7.5			
24-25	2.5		2.0	6.5	6.5			8.0	3.0	3.5			5.0			4.0	3.5						
25-26	2.5		3.5	8.0	10.5	9.5			4.0			5.5				5.5	5.0				7.0		9.5
26-27	2.5		5.0	9.5	5.5	2.0			5.5						2.5		6.0	1.5			2.5		
27-28	2.5		7.0	2.5	10.0	11.0			6.5						4.0			3.0	6.5				
28-29	3.0		8.5	4.0	5.0	3.5	5.5		7.5	4.0		2.0		2.0	5.5			4.0	2.5	5.5			
29-30	3.0		10.0	5.5	9.0		11.0		9.0				2.5			3.0		5.5			8.0		
30-31	3.0		3.0	7.0	4.0	5.0			10.0		4.5	3.0				4.5	2.0	6.5			3.0		5.5

	BE VUL	BO VUL	BS VUL	BT VUL	BU VUL	CD VUL
MAX	9.9	10.4	11.0	11.8	10.6	11.5
MIN	11.4	13.3	11.5	12.5	11.4	12.6
DUR	5	4	3	3	3	4
TOT						
0- 1			4.0	7.5	10.5	10.0
1- 2	4.5		2.5	10.5		2.5
2- 3					3.5	
3- 4					7.0	4.0
4- 5	7.0		10.5		10.5	
5- 6			9.5			5.0
6- 7			8.5		3.5	
7- 8	9.5		7.0	3.5	6.5	6.0
8- 9			6.0	7.0	10.0	
9-10			5.0	10.5		7.5
10-11		10.5	3.5		3.0	
11-12			2.5		6.0	8.5
12-13		9.0			9.5	
13-14						10.0
14-15		7.5	10.5		2.5	2.5
15-16	3.5		9.5	3.5	5.5	11.0
16-17		6.5	8.0	7.0	9.0	3.5
17-18			7.0	10.0		
18-19	6.0	5.0	6.0		2.0	5.0
19-20			5.0		5.5	
20-21		4.0	3.5		8.5	6.0
21-22	8.5		2.5			
22-23		2.5				7.0
23-24				3.0	5.0	
24-25			10.5	6.5	8.0	8.5
25-26			9.5	10.0		
26-27			8.0			9.5
27-28			7.0		4.5	2.0
28-29			6.0		8.0	11.0
29-30	3.0		4.5		11.0	3.5
30-31			3.5			

AAVSO Eclipsing Binary Ephemeris for August 2015 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	DS AND	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	11.4	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1
DUR	3	11	8	4	3	3	3	4	4	3	4	4	4	3	3	7	3	3	7	4	4	3	3
TOT		2																	3				
							(S)		(S)				(S)					(S)					(S)
0- 1	1.5		5.0	3.0		3.5	7.5		4.5	9.0		11.5		6.5	8.5		5.5		8.0	6.5	11.5		8.5
1- 2	7.5					3.0	7.0		4.0	7.5	3.0			9.5	5.5		6.0					9.0	4.0
2- 3				5.0		3.0	7.0		4.0	5.5	8.5						6.5			3.0		4.0	9.0
3- 4	5.0	9.5	4.5		7.5	3.0	7.0		3.5	4.0							6.5					9.5	4.5
4- 5	11.0			7.0		3.0	7.0		3.0	2.0	4.5			4.0			7.0					5.0	10.0
5- 6	2.0					2.5	6.5		3.0	11.5	9.5			6.5			7.5					10.0	5.5
6- 7	8.0		3.5	9.0		2.5	6.5		2.5	9.5				9.5	9.5	1.5	7.5	1.5				5.5	10.5
7- 8				2.0	9.5	2.5	6.5		2.0	8.0	5.5				6.5		8.0	2.0	2.5		2.5	11.0	6.0
8- 9	5.5			11.0		2.5	6.5		2.0	6.0	11.0					5.0	8.0	2.0			5.0	6.5	11.5
9-10			3.0	4.0		2.5	6.5		1.5	4.5				4.0			8.5	2.5			7.5		7.0
10-11	3.0				2.5	2.0	6.0			2.5	6.5			7.0		8.5	9.0	3.0			10.0	7.0	
11-12	9.0			6.0	11.0	2.0	6.0							9.5			9.0	3.0		8.0			7.5
12-13			2.5			2.0	6.0			10.0	2.5		2.5		10.5		9.5	3.5				8.0	
13-14	6.5			8.0		2.0	6.0			8.5	8.0		2.5	1.5	7.5		10.0	4.0		4.5			8.0
14-15					4.5	2.0	6.0			6.5			3.0	4.0	4.0		10.0	4.0				8.5	3.5
15-16	3.5			10.0		1.5	5.5	11.5		4.5	4.0		3.0	7.0			10.5	4.5				4.0	9.0
16-17	9.5			3.0		1.5	5.5	11.0		3.0	9.0		3.5	9.5			11.0	5.0				9.5	4.5
17-18						1.5	5.5	10.5					3.5					5.0	6.5		1.5	5.0	9.5
18-19	7.0			5.0	6.0	1.5	5.5	10.5		10.5	5.0		4.0	1.5	11.5			5.5			4.0	10.0	5.0
19-20						1.5	5.5	10.0		8.5	10.5		4.0	4.5	8.5			5.5			6.5	5.5	10.5
20-21	4.5			7.0		9.0	5.0	9.5		7.0			4.5	7.0	5.0			6.0			9.0	10.5	6.0
21-22	10.5					9.0	5.0	9.5		5.0	6.5		4.5	9.5				6.5				6.0	11.0
22-23	1.5			9.0	8.0	9.0	5.0	9.0		3.5	11.5		5.0					6.5		10.0		11.5	6.5
23-24	8.0			2.0		9.0	5.0	8.5		1.5	2.0		5.0	1.5		4.5		7.0				7.0	
24-25				11.0		8.5	5.0	8.5		11.0	7.5		5.5	4.5			1.5	7.5	1.5	6.0			7.5
25-26	5.0		11.5	4.0		8.5	4.5	8.0		9.0			5.5	7.0	9.0	7.5	1.5	7.5				7.5	
26-27	11.5				9.5	8.5	4.5	7.5		7.5	3.5		6.0	10.0	6.0		2.0	8.0		2.5			8.0
27-28	2.5			6.0		8.5	4.5	7.5		5.5	8.5		6.0				2.5	8.5				8.5	
28-29	8.5	3.0	10.5			8.5	4.5	7.0		4.0			6.5	2.0			2.5	8.5			3.0	4.0	8.5
29-30				8.0	2.5	8.0	4.0	6.5		2.0	4.5		6.5	4.5			3.0	9.0			5.5	9.0	4.0
30-31	6.0				11.0	8.0	4.0	6.5		11.5	10.0		7.0	7.0			3.5	9.5			8.0	4.5	9.5

	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA
MAX	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4
MIN	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9
DUR	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4	5
TOT			(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)		
0- 1		9.5								4.0			4.5	2.0	5.5			7.0			8.5		
1- 2							8.5			3.5		7.5	3.5	6.5	3.0			11.5	7.0		3.0		
2- 3			9.0					7.5		3.0		6.0	2.5	4.0	7.5	2.0		1.5		6.5			
3- 4						6.5				2.5	6.0	5.0		1.5	5.0			6.0			10.0		
4- 5		9.0					7.0		10.5	1.5	5.5	4.0	7.5	6.0	2.5			10.5			4.0		
5- 6											5.0	2.5	6.5	3.5	7.0				6.5	7.5			
6- 7			9.0		7.0						4.0	1.5	5.5	8.0	4.5			5.5		2.0	11.0		
7- 8									7.0		3.5	8.0	4.0	5.0	1.5	2.0	4.5	10.0			5.5		
8- 9		8.5		8.5			10.5				3.0	6.5	3.0	2.5	6.0					9.0			
9-10								10.0		6.0	2.0	5.5	2.0	7.0	3.5			4.5	6.5	3.5			
10-11			8.5		10.0					5.5	1.5	4.5		4.5	8.0			9.0			7.0		
11-12							9.5			5.0		3.0	7.0	2.0	5.5					10.5			
12-13		8.5						6.5		4.0		2.0	6.0	6.5	3.0	2.0		3.5		4.5			
13-14	8.5									3.5			4.5	4.0	7.5			8.0	6.0		8.0		
14-15			8.0			11.0	8.5		9.5	3.0		7.5	3.5	8.5	5.0						2.5		
15-16			11.5							2.0	6.0	6.0	2.5	6.0	2.0			3.0		6.0			10.5
16-17		8.0								1.5	5.5	5.0		3.0	7.0			7.5			9.5		
17-18		11.5					7.5		6.0		5.0	4.0	7.5	7.5	4.0	1.5	2.5		5.5		4.0		
18-19	9.5										4.0	2.5	6.5	5.0	1.5			2.0		7.5		11.0	
19-20			11.0			10.5		9.0			3.5	1.5	5.5	2.5	6.0			6.5		2.0	11.0		
20-21											3.0	8.0	4.0	7.0	3.5		9.5	11.0			5.5		
21-22		11.0					10.5			6.0	2.0	7.0	3.0	4.5	8.0				5.0	9.0			
22-23										5.5	1.5	5.5	2.0	2.0	5.5	1.5		5.5		3.0			
23-24	11.0		11.0							5.0		4.5		6.5	3.0			10.0			6.5		
24-25						10.0	9.5		8.5	4.0		3.5	7.0	3.5	7.5					10.0			
25-26		10.5								3.5		2.0	6.0	8.5	4.5			5.0	5.0	4.5			
26-27										3.0			5.0	5.5	2.0			9.0			8.0		
27-28			10.5				8.5			2.0	6.0	7.5	3.5	3.0	6.5					11.5	2.5		
28-29										1.5	5.5	6.0	2.5	7.5	4.0			4.0		6.0			
29-30		10.5				9.5		8.0			5.0	5.0	1.5	5.0	1.5			8.5	4.5		9.5		
30-31							7.5				4.0	4.0	7.5	2.5	6.0		7.5				3.5		

	TU CMA	TZ CMA	XZ CMI	AK CMI	RW CAP	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP
MAX	9.7	9.8	9.7	10.1	9.8	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1	6.7	8.8	11.4
MIN	10.7	10.5	10.2	11.5	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9	9.8	9.8	12.0
DUR	4	4	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	4	4	5	4	4	3
TOT																					2		
											(S)								(S)				
0- 1						10.0				5.0	9.0	11.0	4.0										7.5
1- 2										4.0	7.5	6.0		9.5		6.5	4.5			7.5			3.5
2- 3					6.5				3.0	3.0	6.5		5.0		2.5				7.5				10.0
3- 4						6.0				2.0	5.5			6.0	6.0			2.0			9.5		6.0
4- 5							6.0	8.0		8.5	4.5	9.0	6.0		10.0					6.5		10.0	2.0
5- 6							10.5			7.5	3.5	4.0		2.0					9.5			8.0	8.0
6- 7						2.5		3.5	5.5	6.5	2.5		7.0			6.0	10.5	4.0				5.5	4.0
7- 8										5.5	1.5									5.0		3.0	10.0
8- 9			11.5							4.5	8.0	7.5	8.0				4.5		11.5		9.0		6.0
9-10					1.5					3.0	7.0	2.0						6.0					2.0
10-11						9.0	5.5		8.0	2.0	6.0		9.0		5.0					4.0			8.0
11-12							10.0			9.0	5.0	11.0	1.5		8.5	5.5							4.0
12-13				11.0						7.5	4.0	5.5	10.0	11.0		11.5		8.0					10.0
13-14						5.5		9.5	1.5	6.5	3.0		2.5				10.5		2.5	2.5	9.0	10.5	6.5
14-15	11.0								10.0	5.5	2.0		11.5	7.0								8.0	2.5
15-16		11.0						5.0		4.5	8.5	9.0	3.5				4.5	10.0				5.5	8.5
16-17						1.5	5.0			3.5	7.5	4.0		3.0		5.0			4.5	1.5		3.5	4.5
17-18							9.5		4.0	2.5	6.5		4.5		4.0	11.0							10.5
18-19										1.5	5.5				7.5						8.5		6.5
19-20			11.5		5.5					8.0	4.5	7.0	5.5		11.5				6.5				2.5
20-21						8.0				7.0	3.0	2.0					10.5			11.5			8.5
21-22									6.5	6.0	2.0		6.5			4.5							4.5
22-23							4.0	11.0		5.0	9.0	10.5				10.5	4.5		9.0			11.0	10.5
23-24	11.5					4.5	9.0			4.0	8.0	5.5	7.5					3.5		10.0	8.0	8.5	6.5
24-25								6.5		3.0	6.5				2.5							6.0	2.5
25-26				11.5					8.5	2.0	5.5		8.5	8.0	6.5				11.0			3.5	9.0
26-27								2.0		8.5	4.5	8.5			10.0	4.5		5.5		9.0		1.5	5.0
27-28										7.5	3.5	3.5	9.5	4.5		10.0	10.5						11.0
28-29							3.5		2.5	6.5	2.5		2.0								8.0		7.0
29-30				10.5	10.0		8.5		11.0	5.5	1.5		10.5				4.5	7.5		7.5			3.0
30-31			11.5			7.5				4.5	8.0	7.0	3.0						2.0				9.0

	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	Y CYG	Y CYG	SW CYG	WW CYG
MAX	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	7.0	7.0	9.3	9.9
MIN	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	7.6	7.6	11.8	13.2
DUR	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	6	6	5	5
TOT																						2	
	(S)							(S)		(S)		(S)		(S)				(S)			(S)		
0- 1	2.5		2.0				4.5	2.0		1.5		2.5		2.0						8.0			2.5
1- 2	8.5		2.0				3.5			2.0	3.5		2.0					2.0					
2- 3	5.0		1.5			3.5	2.5			2.5		4.0	4.5	1.5		3.5					2.0	6.5	
3- 4	11.0					5.5		4.0		2.5			1.5	4.0						8.0			10.0
4- 5	7.0			5.5	5.0	7.5		2.5		3.0			4.0	1.5		7.5							
5- 6	3.0				9.0	10.0	4.5	1.5		3.5		1.5		4.0							2.0		
6- 7	9.0	4.0					3.0			4.0	2.0		3.5							8.0			
7- 8	5.0						2.0	4.5		4.0		3.0		3.5		5.5	2.0						
8- 9	11.0					3.0		3.5		4.5	3.5		3.5					1.5			2.0		
9-10	7.0			2.5		5.5		2.5				4.5		3.0						8.0			
10-11	3.0					7.5	4.0						3.0			3.0							
11-12	9.0				4.5	9.5	2.5		1.5					3.0							2.0	10.0	
12-13	5.0			9.0	8.5		1.5	4.5	2.0			2.0	2.5			7.5				7.5			
13-14	11.5	4.0						3.0	2.5		2.5			2.5									9.0
14-15	7.5					3.0	5.0	2.0	2.5			3.5	2.5				2.0				2.0		
15-16	3.5					5.0	3.5		3.0		4.0			2.0		5.0				7.5			
16-17	9.5					7.0	2.5		3.5				2.0										
17-18	5.5			6.5		9.5		4.0	4.0					2.0	6.5						1.5		
18-19	1.5				4.0	11.5		3.0	4.0		1.5		1.5	4.5		3.0				7.5			
19-20	7.5				7.5		4.5	1.5	4.5			2.0	4.0	1.5									
20-21	3.5	4.5			11.5	2.5	3.0				3.0		1.5	4.0		7.0		2.0			1.5		
21-22	9.5					5.0	2.0	5.0				4.0	4.0				1.5			7.5			
22-23	5.5			4.0		7.0		3.5		1.5	4.5			3.5									
23-24	1.5					9.0		2.5		2.0			3.5			5.0					1.5		7.5
24-25	7.5					11.5	4.0			2.5				3.5	4.5					7.5			
25-26	4.0			10.0	3.0		3.0			3.0	2.0		3.0									3.0	
26-27	10.0				7.0	2.5	1.5	4.5		3.0		2.5		3.0		2.5					1.5		
27-28	6.0	4.5			11.0	4.5		3.0		3.5	3.5		3.0					2.0	2.5	7.5			
28-29	2.0					7.0	5.0	2.0		4.0		4.0		2.5		7.0							
29-30	8.0					9.0	3.5			4.0			2.5								1.5		
30-31	4.0			7.5		11.0	2.5			4.5				2.5					2.0	7.0			

	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA
MAX	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8	9.9
MIN	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7
DUR	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3	4	3	5	5
TOT															2							1	
												(S)											
0- 1	4.0		5.5		9.0			6.0		5.0								11.5		3.0		8.0	
1- 2	10.5			3.0	7.5	3.5				2.5		7.0		3.5				6.5	9.5		3.0		
2- 3	1.5			9.5	6.0			4.0						7.0				1.5	4.0		5.5		2.0
3- 4	7.5	11.0			4.5			11.0	10.5		9.0			10.5			5.5				8.0	3.5	
4- 5		10.5	5.5	7.0	3.5			2.5	7.0			2.0					10.5	10.5		5.0	10.5		
5- 6	5.0	9.5			2.0		9.5	9.0	4.0			11.5	8.5	3.5				5.5	7.5				8.0
6- 7	11.0	9.0		4.0						10.5	4.0			7.0					2.0		2.0		
7- 8	2.0	8.0		10.5	10.5			7.0		8.0				10.5							4.5		
8- 9	8.5	7.5	5.5	1.5	9.0		3.5			5.5		6.0						9.5	10.5	6.5	7.0		
9-10		6.5		8.0	7.5			5.5	11.0	3.0				3.5			4.5	5.0	5.5		9.5		
10-11	5.5	6.0			6.0				7.5		8.0			7.0			9.5						
11-12		5.0		5.5	4.5			3.5	4.0					10.5									
12-13	3.0	4.5	5.5		3.5			10.0				10.5	9.5			10.5		9.0	8.5	8.5	3.5		
13-14	9.0	3.5		3.0	2.0			1.5			3.0			3.5				4.0	3.5		6.0		
14-15		3.0		9.0				8.5		11.0				6.5							8.5	9.0	
15-16	6.5	2.0			10.5	8.0			11.0	8.5		5.0		10.0		7.5	3.5			1.5	11.0		3.0
16-17		1.5	5.5	6.5	9.0		9.0	6.5	8.0	6.0					8.5		8.0	8.0	6.5	10.0			
17-18	3.5				7.5				4.5	3.5	7.0		2.0	3.0				3.0	1.5		2.5	4.5	
18-19	10.0			4.0	6.0	4.0		4.5						6.5		4.5					5.0		9.5
19-20				10.5	5.0		3.0	11.5				9.5	10.5	10.0					9.5	3.5	7.5		
20-21	7.0		5.5	1.5	3.5			2.5			2.0							7.5	4.5		10.0		
21-22				8.0	2.0			9.5	11.5		11.5			3.0	4.0	1.5	2.5	2.5					
22-23	4.5								8.0			4.0		6.5			7.0				1.5		
23-24	10.5			5.0	10.5			7.5	4.5	9.0				10.0				11.5	7.5	5.0	4.0		
24-25	1.5		5.5	11.5	9.0				1.5	6.5	6.0		3.0					6.5	2.5		6.5		
25-26	7.5			2.5	7.5			5.5		4.0				3.0				1.5			9.0		
26-27				9.0	6.0							8.5	11.5	6.5					11.0		11.5		
27-28	5.0				5.0		8.5	4.0						10.0			1.5	10.5	5.5	7.0			
28-29	11.0		5.5	6.5	3.5			10.5	8.5		10.5						6.0	5.5			3.0	10.0	4.0
29-30	2.0				2.0			2.0	5.0			3.0		3.0			10.5				5.5		
30-31	8.5			4.0			2.5	8.5	1.5					6.5					9.0		8.0		

	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	DF HYA	DF HYA	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	VZ LEO	RR LEP
MAX	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	11.0	11.0	9.2	9.2	10.9	8.5	10.5	10.5	9.5	10.6	10.2
MIN	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	11.5	11.5	10.0	10.0	12.3	9.5	11.0	11.0	12.7	11.7	10.9
DUR	5	4	4	3	3	5	4	4	5	5	4	4	4	4	3	3	4	4	5	5	5	4	4
TOT			1			1			1														
	(S)				(S)									(S)		(S)				(S)			
0- 1	11.0			11.5	7.5										2.0	5.5	10.5						
1- 2				10.5											8.5	5.0							
2- 3			9.5	9.5							1.5				7.5	4.0		8.5		6.0			
3- 4		4.0		9.0				7.0							7.0	3.0							
4- 5		9.0		8.0				3.0							6.0	2.0							
5- 6					11.0										5.0	9.0				8.0			
6- 7					10.0	9.5			1.5						4.0	8.0			2.5				
7- 8					9.5			9.5		3.0	6.5	4.5			3.0	7.0		4.0					
8- 9					8.5			5.0	8.0						2.5	6.0				10.0			
9-10		4.0		11.5	7.5								11.5		1.5	5.0			4.5				10.5
10-11	5.5	8.5		10.5						5.0					8.0	4.5	2.5	9.0					
11-12				10.0											7.0	3.5	4.5						
12-13				9.0				7.0							6.5	2.5	6.5		7.0		1.5		
13-14				8.0				3.0		7.5					5.5	1.5	8.0					11.5	
14-15					11.0						4.5	8.0			4.5	8.5	10.0						
15-16		3.5	10.0		10.0				3.0						3.5	7.5		4.5	9.0				
16-17		8.5			9.5			9.5				2.5			2.5	6.5				3.0			
17-18					8.5			5.0	9.5						2.0	5.5							
18-19				11.5	7.5										8.5	4.5		9.5	11.0				
19-20				10.5											7.5	4.0				5.0			
20-21				10.0											7.0	3.0							10.0
21-22		3.5		9.0				7.0		1.5	3.0				6.0	2.0							
22-23		8.5		8.0				3.0							5.0	9.0				7.0			
23-24	6.5				11.0							6.0			4.0	8.0		5.0	2.0				
24-25					10.5				5.0	4.0					3.0	7.0	2.0						
25-26					9.5			9.5							2.0	6.0	3.5			9.0			
26-27					8.5	11.0		5.0							1.5	5.0	5.5	10.0	4.0				
27-28		3.5			7.5					6.0					8.0	4.0	7.5						
28-29		8.0	11.0	10.5							1.5				7.0	3.5	9.0			11.0			
29-30				10.0		7.5	11.0							11.5	6.5	2.5	11.0		6.0				
30-31				9.0				7.0		8.5					5.5	1.5							

	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI
MAX	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	5.8	10.5	10.1	8.8	6.2	10.3	9.5	9.5	11.2	10.5	9.1	10.7
MIN	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3	6.5	11.2	10.7	9.4	7.0	13.3	10.2	10.2	12.4	13.2	9.7	11.3
DUR	6	7	4	5	5	4	5	5	5	5	4	5	5	3	3	4	4	3	3	5	3	4	3
TOT									1														
								(S)											(S)				
0- 1			8.5						9.0					6.0				11.5		10.5			11.5
1- 2		3.5				8.0								7.0	6.0	2.5				9.0			
2- 3														7.5	1.5				9.0	8.0			11.5
3- 4														8.5	7.0	2.0		10.5					
4- 5							11.0					4.5		9.5	2.5								11.5
5- 6				9.0							11.0			2.0	8.0	2.0							
6- 7			2.5											2.5	3.5		10.5	9.5			9.5		11.5
7- 8	5.0			6.5										3.5	9.0	1.5			11.0				
8- 9		3.5												4.5	4.5								11.5
9-10				4.0	11.0							5.5		5.0				9.0					
10-11	2.0		10.0			1.5								6.0	6.0				10.5				11.5
11-12					10.0									7.0	1.5								
12-13						5.5								7.5	7.0								11.5
13-14					8.5									8.5	2.5		10.0		9.5			8.5	
14-15						10.0						6.5		9.5	8.0			11.0					11.5
15-16		3.0			7.5									2.0	3.5								
16-17								11.0			11.0			2.5	9.0				8.5				11.5
17-18					6.0									3.5	4.5			10.0					
18-19														4.5					11.5				11.5
19-20					5.0				10.5			7.0		5.0	5.5					11.0			
20-21	3.5		11.0											6.0	1.5		9.5	9.0		9.5	8.5		11.5
21-22					3.5									7.0	7.0				10.5	8.5			
22-23		2.5		9.5										7.5	2.5	6.5							11.0
23-24					2.5	3.0								8.5	8.0						11.0		
24-25				7.0								8.0	2.5	9.5	3.5	6.0			9.5				11.0
25-26						7.5								2.0	9.0			11.0					
26-27				4.5									4.0	2.5	4.5	6.0							11.0
27-28						11.5					10.5			3.5			9.5		9.0				
28-29				1.5						11.5			5.5	4.5	5.5	5.5		10.0					11.0
29-30		2.0	1.5											5.0	1.5				11.5				
30-31	5.5													6.0	7.0	5.0							11.0

	FZ ORI	GU ORI	GU ORI	U PEG	U PEG	TY PEG	AQ PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	Z PER	RT PER	RV PER	ST PER	XZ PER	BETA PER	Y PSC	UZ PUP	U SGE	V505 SGR	1968 SGR
MAX	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	9.9	10.6	10.3	9.7	10.6	2.2	9.0	9.7	6.4	6.4	12.3
MIN	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0	12.4	12.0	12.7	13.2	12.7	3.5	12.0	10.6	9.1	7.6	13.3
DUR	3	4	4	3	3	6	12	3	3	3	2	4	6	4	8	5	4	8	7	4	6	5	4
TOT							5						2			1					2		
	(S)		(S)		(S)				(S)														
0- 1		10.5		7.0	2.5	11.0		4.5	9.0	4.0				7.5									
1- 2	11.5	9.0		10.0	5.5			6.5	2.5	7.0	9.0			4.0	9.5								
2- 3				4.0	8.5			8.5	4.5	3.5	2.0											5.0	1.5
3- 4	11.5			7.0	2.5			2.0	6.5	6.0					8.5							9.0	4.5
4- 5			10.5	10.0	5.5			4.0	8.5	2.5	5.0							9.5					7.5
5- 6	11.5		9.0	4.0	8.5			6.0	2.0	5.5				9.5	8.0	9.5	3.5						
6- 7				7.0	2.5		7.5	8.0	4.0	1.5	8.5			6.0			7.0						
7- 8	11.5			10.0	5.5			1.5	6.0	4.5				2.5	7.5		10.5	6.5					3.5
8- 9		10.5		4.0	8.5			3.5	8.0	7.5												2.5	6.5
9-10	11.5	9.0		7.0	2.5			5.5	10.0	3.5	5.0				6.5						8.0	7.0	
10-11				10.0	5.5			7.5	3.5	6.5								3.5					
11-12	11.5			4.0	8.5			9.5	5.5	2.5	8.0			8.5	6.0								2.0
12-13			10.5	7.0	2.5			3.0	7.5	5.5				5.0									5.0
13-14	11.5		9.0	10.0	5.5			5.0	9.5	1.5	11.5				5.5	8.5	5.0		8.5				8.0
14-15				4.0	8.5			7.0	2.5	4.5	4.5						8.5						
15-16	11.5			7.0	2.5			9.0	4.5	7.5												5.0	
16-17		10.5		10.0	5.5			2.5	6.5	4.0	7.5			11.0							2.5	9.5	3.5
17-18	11.5	9.0		4.0	8.5		9.5	4.5	9.0	6.5				7.0					3.0				6.5
18-19				7.0	2.0			6.5	2.0	3.0	11.0			3.5									
19-20	11.5			9.5	5.0			8.5	4.0	6.0	4.0		2.5										
20-21			10.5	3.5	8.0			2.0	6.0	2.0		11.5											2.0
21-22	11.0		9.0	6.5	2.0			4.0	8.0	5.0	7.0	10.5				7.0	6.5					3.0	5.0
22-23				9.5	5.0	2.5		6.0	1.5	8.0		10.0	3.5	9.5			10.0					7.5	
23-24	11.0			3.5	8.0			8.0	3.5	4.0	10.5	9.5		6.0						11.5			
24-25		10.5		6.5	2.0			1.5	5.5	7.0	3.5	9.0						11.5					
25-26	11.0	9.0		9.5	5.0	4.5		3.5	7.5	3.0		8.5	5.0										4.0
26-27				3.5	8.0			5.5	9.5	6.0	7.0	8.0									6.0		7.0
27-28	11.0			6.5	2.0			7.5	3.0	2.0		7.0						8.0					
28-29			10.5	9.5	5.0	7.0		9.5	5.0	5.0	10.0	6.5	6.5	8.0			4.0		10.0			5.5	
29-30	11.0		9.0	3.5	8.0			2.5	7.0	1.5	3.0	6.0		4.5		5.5	7.5					9.5	2.5
30-31				6.5	2.0			5.0	9.0	4.5		5.5					11.5	5.0					5.5

	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TX UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA
MAX	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9	11.4	9.1	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8
MIN	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2
DUR	4	4	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4
TOT				1																			
			(S)								(S)					(S)			(S)				
0- 1	4.0		2.5		7.5						8.0	9.0	11.0	6.5	7.0	3.0		4.5	8.5	8.5			5.5
1- 2	1.5		3.5						9.5		8.5		10.5		7.0	3.0		6.0	1.5	3.0	6.5		
2- 3			4.0		9.0						9.0	3.0	10.0		7.0	3.0		7.5	3.0	7.5		3.0	
3- 4			5.0			7.5			10.5	5.5	9.5	7.0	9.0	7.0	7.0	3.0		9.0	4.5	2.5	8.0	8.5	
4- 5			5.5		11.0	9.5				6.0	10.5	11.0	8.5		7.0	3.0		2.0	6.0	6.5			
5- 6			6.5		7.0	11.5	8.0	8.5		7.0	11.0		7.5		7.0	3.0		3.5	7.5	1.5	9.5		
6- 7			7.0							7.5	11.5	5.5	7.0	7.0	7.0	3.0		5.0	9.5	6.0	2.0		
7- 8	5.0	2.0			9.0		10.0	9.5		8.0		9.5	6.5		7.0	3.0		6.5	2.5	10.5	11.0		3.0
8- 9	2.0	2.5		8.0						8.5			5.5		7.0	3.0		8.0	4.0	5.0	3.5		
9-10		3.5			11.0			10.5		9.0		3.5	5.0	7.5	7.0	3.0		9.5	5.5	9.5		11.0	10.5
10-11		4.0			6.5					9.5	5.5	7.5	4.5		7.0	3.0		2.5	7.0	4.5	5.0		
11-12		5.0						11.5		10.0	6.0		3.5		7.0	3.0		4.0	8.5	8.5			
12-13		5.5			8.5					11.0	6.5			8.0	7.0	3.0		5.5	1.5	3.5	6.5		
13-14		6.5								11.5	7.5	6.0			7.0	3.0		7.0	3.0	8.0		3.0	
14-15	6.0	7.0			10.5		8.5				8.0	10.0			7.0	3.0		8.5	4.5	2.5	8.0	8.5	
15-16	3.0		2.0		6.5						8.5			8.0	7.0	3.0		1.5	6.0	7.0			
16-17			2.5				10.0				9.0	4.0			7.0	3.0		3.5	7.5	2.0	9.5		8.0
17-18			3.5		8.5	8.0				5.5	9.5	8.0			7.0	3.0		5.0	9.0	6.5	2.0		
18-19			4.0			9.5				6.0	10.0			8.5	7.0	3.0		6.5	2.0	10.5	11.0		
19-20			5.0	9.5	10.0	11.5				6.5	10.5			2.5	7.0	3.0		8.0	3.5	5.5	3.5		
20-21			5.5							7.0	11.5	6.5			7.5	3.5		9.5	5.0	10.0		11.0	
21-22	6.5		6.5							8.0		10.5		9.0	7.5	3.5		2.5	6.5	4.5	5.0		
22-23	4.0		7.0		8.0					8.5				3.0	7.5	3.5		4.0	8.0	9.0			
23-24		1.5					8.5			9.0		4.5			7.5	3.5		5.5	9.5	4.0	6.5		5.5
24-25		2.5			10.0					9.5	5.5	8.5		9.5	7.5	3.5		7.0	2.5	8.0		3.0	
25-26		3.5					10.5			10.0	6.0			3.5	7.5	3.5		8.5	4.5	3.0	8.0	8.5	
26-27		4.0								10.5	6.5	3.0			7.5	3.5		1.5	6.0	7.5			
27-28		5.0			7.5					11.5	7.0	7.0		9.5	7.5	3.5		3.0	7.5	2.5	9.5		
28-29	7.5	5.5									7.5	11.0		3.5	7.5	3.5	1.5	4.5	9.0	6.5	2.0		
29-30	4.5	6.5			9.5						8.5				7.5	3.5		6.0	2.0	1.5	11.0		
30-31	2.0	7.0		11.5							9.0	5.0		10.0	7.5	3.5		7.5	3.5	6.0	3.5		3.0

	RU	VV	AG	AH	AH	AK	AW	AW	AZ	AZ	BH	Z	AW	AX	AY	BE	BO	BS	BT	BU	CD
	UMI	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	11.0	9.9	10.4	11.0	11.8	10.6	11.5
MIN	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.5	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	4	4	4	4	4	4	3	3	3	3	4	6	5	5	4	5	4	3	3	3	4
TOT					(S)			(S)		(S)											
0- 1	11.5				3.5		1.5		3.5									2.5	3.0	4.0	4.5
1- 2			3.0				3.0		4.5		4.5					5.5			6.0	7.5	
2- 3		2.0								1.5		3.5	8.5					11.5	9.5	10.5	6.0
3- 4	2.5							2.0		3.0			4.0					10.5			
4- 5	3.5							3.5		4.0						8.0		9.0		3.5	7.0
5- 6	4.5																	8.0		7.0	
6- 7	6.0	2.0					2.0		2.0		2.0		9.5		11.0			7.0		10.5	8.0
7- 8	7.0				1.5		3.5		3.5				5.0			10.5		5.5			
8- 9	8.5			2.0					4.5									4.5	2.5	3.5	9.5
9-10	9.5				2.5			2.5		1.5								3.5	6.0	6.5	2.0
10-11	10.5	2.5	3.0	3.0				4.0		2.5	4.0		10.0					2.0	9.5	10.0	10.5
11-12					3.5					4.0			5.5		7.0						3.0
12-13							2.5									2.0		11.5		3.0	
13-14	1.5						4.0		2.0									10.0		6.0	4.5
14-15	3.0	3.0							3.0			10.0	11.0				11.0	9.0		9.5	
15-16	4.0							3.0	4.5		1.5		6.5			4.5		8.0			5.5
16-17	5.5							4.0					1.5		2.5		9.5	6.5	2.5	2.5	
17-18	6.5			1.5			1.5			2.5								5.5	5.5	6.0	7.0
18-19	7.5	3.5			2.0		3.0			3.5						7.0	8.5	4.5	9.0	9.0	
19-20	9.0		3.0	2.0			4.5			5.0	3.5	7.5	7.0					3.5			8.0
20-21	10.0				2.5			1.5	2.0				2.5				7.0	2.0		2.0	
21-22	11.0			3.0				3.0	3.0							9.5				5.5	9.5
22-23		3.5			3.5	3.5			4.0								5.5	11.0		8.5	1.5
23-24							2.0						8.0		8.5			10.0			10.5
24-25	2.0						3.5			2.5		5.5	3.0				4.5	9.0	2.0	1.5	3.0
25-26	3.5									3.5								8.0	5.5	5.0	
26-27	4.5	4.0						2.0		4.5				1.5		1.5	3.0	6.5	9.0	8.5	4.0
27-28	6.0	1.5						3.5	1.5				8.5					5.5			
28-29	7.0		3.0	1.5		2.5			3.0		3.5		4.0	2.0	4.0		2.0	4.5			5.5
29-30	8.0				2.0		2.5		4.0			3.5				4.0		3.0		4.5	
30-31	9.5	4.5		2.5			4.0							2.5				2.0		8.0	6.5

AAVSO Eclipsing Binary Ephemeris for September 2015 all times in U.T.

	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	DS AND	RY AQR	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.8	8.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	11.4	10.1	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1
DUR	3	11	8	4	3	3	3	4	4	3	4	4	4	5	3	3	7	3	3	7	4	4	3
TOT		2																		3			
							(S)		(S)				(S)						(S)				
0- 1	12.0		10.0	10.0		8.0	4.0	6.0		9.5	0.5		7.0		10.0	10.0		3.5					10.0
1- 2	3.0	6.0		3.0		8.0	4.0	5.5		8.0	6.0		7.5			7.0		4.0					5.5
2- 3	9.5				4.5	8.0	4.0	5.5		6.0	11.0		7.5		2.0	3.5		4.0					10.5
3- 4			9.5	5.0		7.5	3.5	5.0		4.0	1.5		8.0		4.5			4.5		5.5			6.0
4- 5	6.5					7.5	3.5	4.5		2.5	7.0		8.0		7.5			5.0			8.0		11.0
5- 6		9.0		7.0		7.5	3.5	4.5		0.5			8.5		10.0			5.0					6.5
6- 7	4.0		8.5		6.0	7.5	3.5	4.0		10.0	3.0		8.5	9.0		11.0		5.5			4.0		2.0
7- 8	10.0			9.0		7.5	3.5	3.5		8.0	8.0		9.0		2.0	8.0	3.5	6.0				2.0	7.5
8- 9	1.0			2.0		7.0	3.0	3.5		6.5			9.0	8.5	4.5	4.5		6.0				4.5	3.0
9-10	7.5		8.0	11.0		7.0	3.0	3.0		4.5	4.0		9.5		7.5	1.0	7.0	6.5				7.0	8.0
10-11				4.0	8.0	7.0	3.0	2.5		3.0	9.5		9.5	7.5	10.0			7.0	1.0				3.5
11-12	4.5					7.0	3.0	2.5		1.0			10.0					7.0	1.0				9.0
12-13	11.0		7.5	6.0		7.0	3.0	2.0		10.5	5.5		10.0	6.5	2.0			7.5	1.5				4.5
13-14	2.0				1.0	6.5	2.5	1.5		8.5	10.5		10.5		5.0	8.5		8.0	1.5				9.5
14-15	8.0			8.0	9.5	6.5	2.5	1.5		7.0	1.5		10.5	6.0	7.5	5.5		8.0	2.0				5.0
15-16			6.5	1.0		6.5	2.5	1.0		5.0	6.5		11.0		10.0	2.0		8.5	2.5				10.5
16-17	5.5			10.0		6.5	2.5	0.5		3.5	12.0		11.0	5.0				9.0	2.5				6.0
17-18	11.5			3.0	2.5	6.0	2.5			1.5	2.5		11.5		2.0				3.0		5.5	1.0	11.0
18-19	2.5		6.0		11.5	6.0	2.0		12.0	11.0	8.0		11.5	4.5	5.0				3.5			3.5	6.5
19-20	9.0			5.0		6.0	2.0		11.5	9.0			12.0		7.5	9.5			3.5		2.0	6.0	2.0
20-21						6.0	2.0		11.0	7.5	3.5			3.5	10.5	6.5			4.0	4.5		8.5	7.0
21-22	6.0		5.5	7.0	4.5	6.0	2.0		11.0	5.5	9.0					3.0			4.5				2.5
22-23						5.5	1.5		10.5	3.5		0.5		2.5	2.5		3.0		4.5				8.0
23-24	3.5			9.0		5.5	1.5		10.0	2.0	5.0	1.0			5.0				5.0				3.5
24-25	9.5		5.0	2.0		5.5	1.5		10.0	11.5	10.0	1.0		2.0	7.5		6.5		5.5				8.5
25-26	0.5			11.0	6.0	5.5	1.5		9.5	9.5	1.0	1.5			10.5	10.5			5.5				4.0
26-27	7.0			4.0		5.5	1.5		9.0	7.5	6.0	1.5		1.0		7.5			6.0				9.5
27-28			4.0			5.0	1.0		9.0	6.0	11.5	2.0			2.5	4.0			6.5				5.0
28-29	4.0			6.0		5.0	1.0		8.5	4.0	2.0	2.0			5.0			0.5	6.5		7.5	2.5	10.0
29-30	10.5				8.0	5.0	1.0		8.0	2.5	7.5	2.5			8.0			1.0	7.0			5.0	5.5

	SS ARI	WW AUR	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM
MAX	10.1	5.7	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6
MIN	11.1	6.4	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8
DUR	3	5	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5
TOT	(S)		(S)		(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)
0- 1	5.0				10.0				11.5		11.5		3.5	3.0			3.5			3.0		7.0	
1- 2	10.0		7.0	6.5						4.5			3.0	1.5	5.5	4.5	0.5	1.0		7.5		1.5	10.5
2- 3	5.5			10.0					6.5				2.0		4.0	1.5	5.5				4.0		5.0
3- 4	11.0				6.5			9.0	10.5		7.5		1.5		3.0	6.0	2.5			2.5	12.0	8.5	
4- 5	6.5				9.5		5.5						1.0	5.5	2.0	3.5				7.0		3.0	
5- 6	2.0			6.0					5.0	11.0		4.0		4.5	0.5	1.0	4.5			11.0			6.5
6- 7	7.0		8.0	9.5		7.0			9.5		4.0	3.5		3.5		5.5	2.0	1.0		1.5	4.0	10.0	1.0
7- 8	2.5				6.0							3.0		2.0	6.0	3.0	6.5			6.0	11.5	4.5	
8- 9	8.0				9.5		9.0	8.5		7.0		2.0		1.0	5.0		4.0			10.5			8.0
9-10	3.5								8.5			1.5			3.5	5.0	1.5		5.5	0.5		11.5	2.0
10-11	8.5			9.0		10.5					10.5	1.0			2.5	2.5	6.0			5.0	3.5	5.5	
11-12	4.0		9.5										4.0	5.0	1.5		3.0	0.5		9.5	11.5		9.0
12-13	9.0				9.0		12.0		7.5				3.5	4.0		4.0	0.5						3.5
13-14	4.5							8.0	12.0		6.5		3.0	3.0		1.5	5.0			4.5		7.0	
14-15	10.0			9.0									2.0	1.5	5.5	6.0	2.5			8.5	3.0	1.5	10.5
15-16	5.5								6.5	10.0			1.5		4.5	3.5					11.0		5.0
16-17	10.5		10.5		8.5				10.5				1.0		3.0	1.0	4.5			3.5		8.5	
17-18	6.0											4.0		6.0	2.0	5.5	2.0			8.0		2.5	12.0
18-19	1.5			8.5				7.5	5.0	6.5		3.5		4.5	1.0	3.0	6.5				2.5		6.0
19-20	7.0			12.0					9.5			3.0		3.5			4.0		3.5	2.5	10.5	9.5	0.5
20-21	2.5	5.5			8.5						9.5	2.0		2.5		4.5	1.0			7.0		4.0	
21-22	7.5		11.5		11.5							1.5		1.0	5.0	2.0	5.5			11.5			7.5
22-23	3.0			8.0					8.5			1.0			4.0	6.5	3.0		11.0	2.0	2.5	11.0	2.0
23-24	8.5			11.5				7.0			6.0		4.0		2.5	4.0				6.0	10.0	5.5	
24-25	4.0				8.0								3.5	5.0	1.5	1.5	5.0			10.5			9.0
25-26	9.0	6.5			11.5				7.5	9.0			3.0	4.0		6.0	2.5			1.0			3.5
26-27	4.5			8.0					12.0				2.0	3.0		3.5				5.5	2.0	7.0	
27-28	9.5			11.0									1.5	1.5	5.5	1.0	4.5			10.0	10.0	1.0	10.5
28-29	5.0				7.5			6.5	6.5	5.5			1.0	0.5	4.5	5.5	1.5						4.5
29-30	10.5				11.0				10.5			4.0			3.0	2.5	6.5		1.5	4.5		8.0	

	R	RT	SX	TU	TZ	TZ	UU	XZ	AK	RW	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	V364
	CMA	CMA	CMA	CMA	CMA	CMA	CMA	CMI	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS
MAX	6.2	11.4	10.3	9.7	9.8	9.8	10.0	9.7	10.1	9.8	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2
MIN	6.8	12.9	11.4	10.7	10.5	10.5	12.5	10.2	11.5	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7
DUR	4	5	4	4	4	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	4
TOT						(S)										(S)							
0- 1				9.0											3.5	7.0	1.5	11.5		1.5	4.0		
1- 2				12.0			10.0							4.5	2.0	6.0		4.0		5.0	10.0		9.5
2- 3								9.0	9.5		3.5		8.0		1.0	5.0	10.0			9.0			
3- 4												3.0			8.0	4.0	5.0	5.0				10.5	
4- 5												7.5	3.5		6.5	3.0							11.5
5- 6			11.5							5.0				7.0	5.5	2.0		6.0	9.5		3.5	4.5	
6- 7		10.5						10.0	8.5						4.5	1.0	8.5				9.5		0.5
7- 8					9.5				11.5						3.5	7.5	3.0	7.0	5.5				
8- 9														0.5	2.5	6.5				4.0			
9-10				9.5							6.5	2.5		9.5	1.5	5.5	11.5	8.0	1.5	8.0			2.5
10-11								11.5				7.0			8.0	4.5	6.5			11.5	3.0	11.0	
11-12									10.5			12.0	9.5		7.0	3.5	1.5	9.0			9.0		
12-13	11.0										2.5			3.0	6.0	2.0		1.5				5.0	4.5
13-14								9.0					5.0	12.0	5.0	1.0	10.0	10.0					
14-15							10.0								4.0	8.0	5.0	2.5					
15-16		12.0							10.0			2.0	0.5		3.0	6.5		11.0		3.0	2.5		7.0
16-17												6.5		5.5	2.0	5.5		3.5	10.5	6.5	8.5		
17-18								10.0				11.5			1.0	4.5	8.0			10.5		11.0	
18-19			11.5	10.0											7.5	3.5	3.0	4.5	6.5				9.0
19-20		9.0							9.0		5.5				6.5	2.5						5.0	
20-21	10.0												11.0	8.0	5.5	1.5	11.5	5.5	3.0		2.5		
21-22								11.5				1.5			4.5	8.0	6.5				8.0		11.0
22-23										4.0	2.0	6.0	6.5		3.5	7.0	1.0	6.5		1.5			
23-24												10.5		1.5	2.0	6.0				5.5			
24-25								8.5	11.0				2.0	10.5	1.0	5.0	9.5	7.5		9.5		11.0	
25-26															8.0	4.0	4.5				2.0		
26-27											8.5				7.0	3.0		8.5			8.0	5.0	2.0
27-28				10.5			10.0					1.0		4.0	5.5	2.0		1.0	11.5				
28-29		10.5				11.0		10.0	10.0			5.5			4.5	1.0	8.0	9.5					
29-30	12.0										4.5	10.0			3.5	7.5	2.5	2.0	8.0				4.0

	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	Y CYG	Y CYG
MAX	11.2	10.1	6.7	8.8	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	7.0	7.0
MIN	11.7	10.9	9.8	9.8	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	7.6	7.6
DUR	4	5	4	4	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	6	6
TOT			2																				
	(S)					(S)							(S)		(S)		(S)		(S)				(S)
0- 1				11.0	5.0	10.0						1.0		1.0			1.5	2.0		2.0	4.5		
1- 2		6.5		9.0	1.0	6.0				2.5	2.5		3.0	1.5		2.5			2.0				1.5
2- 3	4.0		7.5	6.5	7.0	2.0				6.5	4.5		1.5	1.5				2.0				7.0	
3- 4				4.0	3.0	8.0	5.0			10.0	6.5		12.0	2.0					1.5		2.5		
4- 5		5.0		1.5	9.0	4.0			5.0		8.5	2.0		2.5				1.5					1.0
5- 6	6.0				5.5	10.5					11.0	1.0							1.5			7.0	
6- 7					1.5	6.5							2.5			1.0		1.0					
7- 8		4.0	7.0		7.5	2.5			11.0		2.0		1.5				2.0		1.0				1.0
8- 9	8.0				3.5	8.5				1.5	4.0	3.0						1.0			4.5	7.0	
9-10				11.5	9.5	4.5			2.0	5.5	6.5	1.5							0.5				
10-11		2.5		9.0	5.5	10.5	5.5	12.0		9.5	8.5	12.0			0.5								1.0
11-12	10.0			6.5	1.5	6.5		11.5			10.5		2.0		1.0						2.0	7.0	
12-13			7.0	4.5	7.5	2.5		11.5	8.5				1.0		1.5		1.0						
13-14		1.0		2.0	3.5	8.5		11.0			2.0	2.5			1.5	1.5							1.0
14-15					9.5	4.5		10.5			4.0	1.5			2.0		2.5					6.5	
15-16					5.5	0.5		10.5		1.0	6.0				2.5			2.5					
16-17	1.5				2.0	7.0		10.0		5.0	8.5		1.5						2.0		4.5		1.0
17-18		11.5	6.5		8.0	3.0	5.5	9.5	6.0	9.0	10.5		12.0					2.0				6.5	
18-19				12.0	4.0	9.0		9.0				2.0				0.5			2.0				
19-20	3.5			9.5	10.0	5.0		9.0			1.5	1.0					1.5	1.5			2.0		0.5
20-21		10.0		7.0	6.0	1.0		8.5			4.0		2.5			2.0			1.5			6.5	
21-22				4.5	2.0	7.0		8.0			6.0		1.5	0.5				1.5					
22-23	5.5		6.0	2.5	8.0	3.0		8.0	3.5		8.0			1.0					1.0				0.5
23-24		9.0			4.0	9.0		7.5		4.5	10.0	2.0		1.5				1.0				6.5	
24-25					10.0	5.0	6.0	7.0		8.0		0.5		1.5					1.0		4.0		
25-26	7.5				6.0	1.0		7.0	9.5		1.5		2.0	2.0		1.0		0.5					0.5
26-27		7.5			2.0	7.0		6.5			3.5		1.0	2.5			2.0					6.5	
27-28			6.0		8.0	3.0		6.0	0.5		5.5	2.5				2.5					2.0		
28-29	9.5			10.0	4.5	9.5		6.0			8.0	1.5											
29-30		6.0		7.5	10.5	5.5		5.5			10.0										6.0	6.5	

	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA
MAX	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0
MIN	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9
DUR	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3	4	3
TOT	2																2						
														(S)									
0- 1						10.0	10.5					9.5	5.0		4.0	9.5				9.5	3.5	8.5	10.5
1- 2			5.5		5.5	1.5	9.0	9.0		7.0		7.0								5.0			
2- 3		6.5	12.0			7.5	7.5					4.5		7.5		2.5							2.0
3- 4	6.5		3.0	11.5			6.5			5.0	8.5	1.5				6.0			5.0		7.0	1.5	4.5
4- 5			9.0	10.5		5.0	5.0	5.0		11.5	5.5		9.5			9.5			9.5	9.0	1.5	10.5	7.0
5- 6				10.0	5.0	11.5	3.5			3.0	2.0			2.0						4.0			9.5
6- 7			6.5	9.0		2.5	2.0			10.0						2.5							11.5
7- 8				8.5		9.0	0.5	1.0	8.0	1.0			4.0		5.0	6.0		7.0			5.0	3.5	1.0
8- 9			3.5	7.5			10.5			8.0		10.0				9.5				8.0		12.0	3.5
9-10			10.0	7.0	5.0	6.0	9.0				9.0	7.5		6.5			9.5		4.0	3.0			6.0
10-11			1.0	6.5			7.5		1.5	6.0	5.5	5.0				2.5		3.5	8.5		8.0		8.5
11-12			7.0	5.5		3.5	6.5				2.5	2.0	8.5			6.0					3.0	5.0	10.5
12-13	10.0	5.5		5.0		10.0	5.0			4.0				1.0		9.5				7.0			
13-14			4.5	4.0	5.0	1.0	3.5			11.0				10.5				0.5		2.5			2.5
14-15			10.5	3.5		7.5	2.0			2.5			3.0		6.0	2.5	4.5				6.0		5.0
15-16			1.5	2.5			0.5			9.0	9.5					6.0			3.0		1.0	7.0	7.5
16-17			7.5	2.0		5.0	10.5				6.0	10.5		5.5		9.0			7.5	6.5			9.5
17-18				1.0	5.0	11.0	9.0			7.0	2.5	8.0								1.5	9.0		
18-19			5.0			2.5	8.0	9.5	7.0			5.5	7.5			2.5					4.0		1.5
19-20			11.0			8.5	6.5			5.5		2.5				5.5						8.5	4.0
20-21			2.5				5.0							9.5		9.0				5.5			6.5
21-22			8.5		5.0	6.0	3.5	5.5	1.0	3.5	9.5		2.0		7.0				2.0	0.5	7.0		8.5
22-23		4.5					2.0			10.0	6.5					2.0			6.5		2.0	2.0	11.0
23-24			5.5			3.5	0.5			1.5	3.0			4.5		5.5				9.5		10.5	
24-25			12.0			9.5	10.5	2.0		8.5		11.0				9.0				5.0			3.0
25-26			3.0		5.0	1.0	9.0					8.5	6.5								5.0		5.5
26-27	3.5		9.0			7.0	8.0			6.5		6.0				2.0						3.5	7.5
27-28							6.5				10.0	3.0		8.5		5.5		9.0	0.5	9.0			10.0
28-29			6.5			4.5	5.0			4.5	6.5	0.5	1.0		8.0	9.0			5.5	4.0	8.5		
29-30					5.0	11.0	3.5		6.5	11.5	3.0		10.5						10.0		3.0		2.0

	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC	CM LAC
MAX	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9	8.5
MIN	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3	9.5
DUR	5	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4
TOT	1				1			1			1												
			(S)				(S)										(S)				(S)		
0- 1	5.0	10.5				8.0				3.0							11.0		12.0	4.5	0.5		5.5
1- 2						7.5	11.0							4.5			11.0			3.5	7.5		
2- 3			1.5	3.5		6.5	10.5				6.5						10.5			2.5	6.5		
3- 4	0.5			8.0		5.5	9.5		10.5								10.5			2.0	5.5		10.5
4- 5							8.5			5.0							10.5			1.0	4.5		
5- 6			8.0		6.5	11.5	8.0			0.5							10.0			7.5	4.0		1.0
6- 7						11.0	7.0										10.0			6.5	3.0		
7- 8						10.0	6.0					2.5					9.5			6.0	2.0	1.0	
8- 9				3.0		9.0			10.0	7.0							9.5			5.0	1.0	3.0	6.0
9-10				8.0		8.0				2.5	1.5		5.0							4.0	8.0	5.0	
10-11		5.0			11.5	7.5	11.0					4.5		3.0				12.0		3.0	7.0	6.5	
11-12	10.5					6.5	10.5								11.0					2.0	6.0	8.5	11.0
12-13						5.5	9.5													1.5	5.0	10.0	
13-14		11.5					8.5		9.5	5.0		7.0								8.0	4.0	12.0	1.5
14-15	6.0			3.0		11.5	8.0			0.5										7.0	3.5		
15-16			2.5	8.0		11.0	7.0													6.0	2.5		
16-17						10.0	6.0						3.5			12.0				5.5	1.5		6.5
17-18	1.5					9.0				7.0						11.5				4.5	0.5		
18-19			9.0		7.0	8.5		9.0	8.5	2.5	3.5					11.5		11.5		3.5	7.5		
19-20						7.5	11.5							1.0		11.5				2.5	6.5		11.5
20-21				3.0		6.5	10.5									11.0				1.5	5.5		
21-22				7.5		5.5	9.5	6.0				1.0				11.0				1.0	4.5		2.0
22-23							8.5			5.0						10.5				7.5	3.5	2.0	
23-24		6.5				11.5	8.0		8.0				2.0			10.5				6.5	3.0	4.0	
24-25						11.0	7.0					3.5			10.5	10.5				6.0	2.0	6.0	7.0
25-26	11.5					10.0	6.0									10.0				5.0	1.0	7.5	
26-27				2.5		9.0				7.0				4.5	12.0	10.0		11.5		4.0	8.0	9.5	
27-28				7.5		8.5				2.5	5.0	5.5				10.0				3.0	7.0	11.0	
28-29	7.0		3.5			7.5	11.5		7.5							9.5				2.0	6.0		
29-30						6.5	10.5									9.5				1.0	5.0		2.5

	CO LAC	CO LAC	Y LEO	VZ LEO	RR LEP	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	BB MON	BO MON	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH	EQ ORI	ER ORI
MAX	10.5	10.5	9.5	10.6	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.8	5.8	10.5	10.1	8.8	6.2	10.3	9.5
MIN	11.0	11.0	12.7	11.7	10.9	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.3	12.1	6.5	11.2	10.7	9.4	7.0	13.3	10.2
DUR	5	5	5	4	4	6	7	4	5	5	4	5	5	5	4	5	5	5	3	3	4	4	3
TOT														1									
		(S)											(S)										
0- 1					9.5												1.0		7.0	2.5			9.5
1- 2	8.0				7.5																4.5		
2- 3		2.5				2.5		9.0												3.5			
3- 4													9.0						1.0		4.5	9.0	8.5
4- 5	10.0																		2.0	4.5			
5- 6		4.5					1.5				4.5						1.5		2.5		4.0		11.0
6- 7				11.0															3.5	5.5			7.5
7- 8	12.0										9.0			12.0	10.5				4.5	1.5	3.5		
8- 9		6.5							10.0							11.5			5.0	6.5			10.5
9-10	1.0													10.0					6.0	2.5	3.0		6.5
10-11					11.5				7.5						8.5		2.5		7.0			8.5	
11-12		8.5	9.5		9.0									7.5						3.5	3.0		9.5
12-13	3.0				7.0		1.0	10.0	5.0														
13-14																			1.0	4.5	2.5		
14-15		10.5							2.5										2.0				8.5
15-16	5.0					1.0		7.0							12.0		3.0		2.5	5.5	2.0		
16-17			11.0								2.0	11.5							3.5	1.0			11.5
17-18																9.5			4.5	6.5	1.5	8.0	8.0
18-19	7.0			10.5							6.5				10.0				5.0	2.5			
19-20		1.5					0.5			9.5									6.0		1.5		10.5
20-21											10.5						4.0		6.5	3.5			7.0
21-22	9.0				11.0					8.0					8.5						1.0		
22-23		3.5			9.0			11.0												4.5			9.5
23-24					7.0					7.0									1.0		0.5		
24-25	11.0																	1.0	2.0	5.5		7.5	
25-26		5.5				2.5		8.0	10.5	5.5							4.5		2.5	1.0			9.0
26-27															11.5			2.5	3.5	6.5			
27-28									8.0	4.5									4.0	2.5			11.5
28-29		7.5											11.5	11.0				4.0	5.0				8.0
29-30	2.0								5.5	3.0	3.5				10.0				6.0	3.5			

	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI	GU ORI	GU ORI	U PEG	U PEG	TY PEG	AQ PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	Z PER	RT PER	ST PER	XZ PER	BETA PER	Y PSC
MAX	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	9.9	10.6	9.7	10.6	2.2	9.0
MIN	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0	12.4	12.0	13.2	12.7	3.5	12.0
DUR	3	5	3	4	3	3	4	4	3	3	6	12	3	3	3	2	4	6	4	5	4	8	7
TOT												5						2		1			
	(S)					(S)		(S)		(S)				(S)									
0- 1					6.5	11.0	12.0		0.5	5.0	9.0		7.0	2.5	7.0	6.5	5.0	7.5					
1- 2	10.5			6.0	11.0	6.5	10.5		3.5	8.0			9.0	4.5	3.5		4.5						4.5
2- 3	7.0				6.5	11.0	9.0		6.5	2.0			2.0	6.5	6.5	9.5	3.5		10.5			2.0	
3- 4			7.5		11.0	6.5	7.5		0.5	5.0	11.0	1.0	4.0	8.5	2.5	2.5	3.0	9.0	7.0				
4- 5	10.0			9.5	6.5	11.0		12.0	3.5	8.0			6.0	2.0	5.5		2.5		3.0		2.0		
5- 6					11.0	6.5		10.5	6.5	2.0			8.5	4.0	1.5	6.0	2.0				5.5		
6- 7			10.0		6.5	11.0		9.0	9.5	5.0			1.5	6.0	4.5		1.5	10.5		4.5	9.0		
7- 8	9.0	11.5			11.0	6.5		7.5	3.5	8.0			3.5	8.0	0.5	9.0	0.5						
8- 9		10.0			6.5	11.0	12.0		6.5	2.0			5.5	1.5	3.5	2.5			9.0				
9-10	12.0	9.0			11.0	6.5	10.5		9.5	5.0			7.5	3.5	6.5			11.5	5.5				
10-11	8.0	7.5			6.5	11.0	9.0		3.5	8.0			1.0	5.5	2.5	5.5			2.0				
11-12		6.5			11.0	6.5	7.5		6.5	2.0			3.0	7.5	5.5					11.5			
12-13	11.0				6.5	11.0		12.0	9.5	5.0			5.0	1.0	2.0	9.0					3.5		11.5
13-14	7.0				11.0	6.5		10.5	3.5	8.0			7.0	3.0	5.0	2.0			11.5		7.0		
14-15					6.5	11.0		9.0	6.5	2.0		3.5	9.0	5.0	1.0				8.0	3.0	10.5		
15-16	10.0				11.0	6.5		7.5	9.5	5.0			2.5	7.0	4.0	5.0			4.5				
16-17					6.5	11.0	12.0	6.5	3.5	8.0			4.5	9.0	7.0				0.5			10.0	6.0
17-18			6.5		11.0	6.5	10.5		6.5	2.0			6.5	2.0	3.0	8.5							
18-19	9.0				6.5	11.0	9.0		9.5	5.0			8.5	4.5	6.0	1.5							
19-20					11.0	6.5	7.5		3.5	8.0			2.0	6.5	2.0	11.5			10.0	10.0	1.0	6.5	
20-21	12.0		9.0		6.5	11.0	6.5	12.0	6.5	2.0			4.0	8.5	5.0	5.0			6.5		5.0		
21-22	8.5				11.0	6.5		10.5	9.5	5.0			6.0	1.5	1.0				3.0		8.5		
22-23					6.5	11.0		9.0	3.0	7.5			8.0	3.5	4.0	8.0				1.5		3.5	
23-24	11.0		11.5	7.0	11.0	6.5		7.5	6.0	1.5			1.5	5.5	7.0	1.0							
24-25	7.5				6.5	11.0	12.0	6.5	9.0	4.5			3.5	8.0	3.0	11.5							
25-26					11.0	6.5	10.5		3.0	7.5	2.5	6.0	5.5	1.0	6.0	4.5			9.0				
26-27	10.0	11.5		11.0	6.5	11.0	9.0		6.0	1.5			7.5	3.0	2.5				5.5				
27-28	6.5	10.5			11.0	6.5	7.5		9.0	4.5			1.0	5.0	5.5	7.5			1.5	9.0	2.5		
28-29		9.5			6.5	11.0	6.5	12.0	3.0	7.5	5.0		3.0	7.0	1.5	0.5	12.0				6.5		
29-30	9.5	8.0			11.0	6.5		10.5	6.0	1.5			5.0	0.5	4.5	11.0	11.5				10.0		

	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TX UMA	TY UMA
MAX	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9	11.4	9.1	9.1	6.8	11.7
MIN	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0	12.5	9.9	9.9	8.9	12.4
DUR	4	4	6	5	4	4	4	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3
TOT			2						1														
		(S)						(S)								(S)					(S)		
0- 1	10.0							1.5		11.5	8.0				5.5	9.5	9.0		4.0	7.5	3.5	3.0	0.5
1- 2								2.5		7.5	10.0	8.5			6.0	10.0				7.5	3.5		2.0
2- 3		10.0			1.0			3.0	6.0		11.5				6.5	10.5	3.5	12.0	10.5	7.5	3.5		3.5
3- 4				3.0	4.0			4.0		9.5		10.5			7.0	11.0	7.5	11.0	4.5	7.5	3.5		5.0
4- 5	9.5			7.5				5.0		5.5					7.5	3.5	11.5	10.5		7.5	3.5		7.0
5- 6						5.5				11.0					8.5	4.0	1.5	10.0	10.5	7.5	3.5		8.5
6- 7		9.0				2.5				7.0					9.0	4.5	5.5	9.0	5.0	7.5	3.5		1.5
7- 8					2.5		1.0								9.5	5.5	9.5	8.5		7.5	3.5		3.0
8- 9					6.0		1.5			9.0		7.0			10.0	6.0		8.0	11.0	7.5	3.5		4.5
9-10				1.0			2.5			5.0					10.5	6.5	4.0	7.0	5.0	7.5	3.5		6.0
10-11				5.5			3.0			11.0		9.0			11.0	7.0	8.0	6.5		7.5	3.5		7.5
11-12					1.5		4.0			7.0				6.5	3.5	7.5		6.0	11.5	7.5	3.5		9.0
12-13			3.5		4.5		4.5					10.5			4.0	8.0	2.0	5.0	5.5	8.0	4.0	9.0	2.0
13-14						3.5			7.5	9.0	6.5		6.0	7.5	4.5	9.0	6.0	4.5		8.0	4.0		3.5
14-15						0.5				4.5	8.0				5.5	9.5	10.5	3.5	11.5	8.0	4.0		5.0
15-16								1.0		10.5	10.0		7.0	8.5	6.0	10.0		3.0	6.0	8.0	4.0	10.5	6.5
16-17				3.5	3.0			1.5		6.5	12.0				6.5	10.5	4.5	2.5		8.0	4.0		8.0
17-18								2.5				7.0	8.0	9.5	7.0	11.0	8.5	1.5		8.0	4.0		1.0
18-19								3.0		8.5					7.5	3.5			6.0	8.0	4.0		2.5
19-20	12.0							4.0		4.5		9.0	9.5	11.0	8.0	4.0	2.5			8.0	4.0		4.0
20-21					1.5	4.5		4.5		10.5					8.5	4.5	6.5			8.0	4.0		5.5
21-22		11.5			4.5	1.5				6.5		11.0	10.5	12.0	9.5	5.0	11.0		6.5	8.0	4.0		7.0
22-23			7.0	1.5											10.0	6.0	1.0			8.0	4.0		8.5
23-24	11.5			6.0			1.0			8.0			11.5		10.5	6.5	5.0			8.0	4.0		2.0
24-25							1.5		9.5			5.5			11.0	7.0	9.0		7.0	8.0	4.0		3.5
25-26		11.0			3.5		2.5			10.0					3.5	7.5			1.0	8.0	4.0		5.0
26-27							3.0			6.0		7.0			4.0	8.0	3.0			8.0	4.0		6.5
27-28	10.5					5.0	4.0		4.0	12.0	6.5				4.5	8.5	7.5		7.0	8.0	4.0		8.0
28-29						2.0	4.5			8.0	8.5	9.0			5.0	9.0	11.5		1.5	8.0	4.0		1.0
29-30		10.5	1.0	4.0	2.0						10.0				5.5	10.0	1.5			8.0	4.0		2.5

	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	VV VIR	AG VIR	AH VIR	AH VIR	AK VIR	AW VIR	AW VIR	AZ VIR	AZ VIR	BH VIR	Z VUL	AW VUL	AX VUL	AY VUL	BE VUL	BO VUL	BS VUL
MAX	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	11.0	9.9	10.4	11.0
MIN	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.5	12.9	11.4	13.3	11.5
DUR	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5	5	4	5	4	3
TOT	(S)									(S)			(S)		(S)								
0- 1	5.0	0.5		11.0		10.5	2.0						1.0		2.0			9.5					1.0
1- 2	6.5	5.0	5.0		10.0	12.0												5.0	3.5		6.5		
2- 3	8.0	9.5														1.0							
3- 4	1.0	4.0	6.5			1.5					2.0	1.5		1.5			1.0		4.0				9.0
4- 5	2.5	8.5				3.0	2.0							2.5				10.0		10.0	9.0		7.5
5- 6	4.0	3.5	8.0	8.5		4.0												5.5	4.5				6.5
6- 7	5.5	7.5			0.5	5.0			0.5				1.5		1.0			1.0					5.5
7- 8	7.0	2.5	9.5			6.5				1.0					2.0				5.0				4.0
8- 9	8.5	7.0	2.0		7.5	7.5		1.0	1.5														3.0
9-10	1.5	2.0	11.0			9.0					1.0	1.5						6.5	5.5	5.5	0.5		2.0
10-11	3.0	6.0	3.5			10.0								1.5				1.5					0.5
11-12	4.5	1.0		11.0		11.0								2.5		0.5			6.5				
12-13	6.0	5.5	5.0										2.0								3.0		
13-14	8.0	9.5				1.0									0.5			7.0	7.0				8.5
14-15	1.0	4.5	6.5			2.0						0.5			2.0			2.5		1.5			7.5
15-16	2.5	9.0			5.5	3.5						2.0				2.5	8.0		7.5		5.5		6.5
16-17	4.0	3.5	8.0	8.5		4.5																	5.0
17-18	5.5	8.0				6.0	0.5	1.0	0.5				1.0	1.0				8.0	8.0				4.0
18-19	7.0	3.0	9.5			7.0				1.0			2.5	2.5				3.0			8.0		3.0
19-20	8.5	7.0	2.0			8.0			1.5										8.5				2.0
20-21	1.5	2.0	11.0			9.5						1.0					5.5						0.5
21-22	3.0	6.5	3.5			10.5	1.0								1.5			8.5	9.0	7.0	10.5		
22-23	4.5	1.5		11.0	3.0	11.5												4.0				9.0	
23-24	6.0	5.5	5.0										1.5						10.0				8.5
24-25	7.5	0.5			10.0	1.5								1.0		2.0						7.5	7.5
25-26	0.5	5.0	6.5			2.5	1.5							2.0			3.5	9.5	10.5				6.5
26-27	2.0	9.0				4.0		1.0				1.5						5.0		3.0	2.5	6.5	5.0
27-28	3.5	4.0	8.0	8.5		5.0																	4.0
28-29	5.0	8.5				6.5			0.5						1.5							5.0	3.0
29-30	6.5	3.5	9.5			7.5	2.0			1.0			1.5		2.5			10.0			5.0		1.5

	BT VUL	BU VUL	CD VUL
MAX	11.8	10.6	11.5
MIN	12.5	11.4	12.6
DUR	3	3	4
TOT			
0- 1		11.0	
1- 2	1.5	1.0	8.0
2- 3	5.0	4.0	
3- 4	8.5	7.5	9.0
4- 5		11.0	1.5
5- 6			10.5
6- 7		3.5	2.5
7- 8		7.0	
8- 9		10.5	4.0
9-10	1.5		
10-11	5.0	3.5	5.0
11-12	8.0	6.5	
12-13		10.0	6.5
13-14			
14-15		3.0	7.5
15-16		6.0	
16-17		9.5	9.0
17-18	1.0		1.5
18-19	4.5	2.5	10.0
19-20	8.0	6.0	2.5
20-21		9.0	
21-22			3.5
22-23		2.0	
23-24		5.5	5.0
24-25		8.5	
25-26	1.0		6.0
26-27	4.5	1.5	
27-28	7.5	5.0	7.5
28-29		8.5	
29-30			8.5

AAVSO Eclipsing Binary Ephemeris for October 2015 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1	5.7
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1	6.4
DUR	3	11	8	4	3	3	3	4	4	3	4	4	3	3	7	3	3	7	4	4	3	3	5
TOT		2																3					
							(S)		(S)								(S)					(S)	
0- 1	1.5	3.0	3.5	8.0		5.0	1.0		8.0	0.5		2.5				1.0			3.5		1.0	6.0	8.0
1- 2	7.5			1.0		5.0	1.0		7.5	10.0	3.5	3.0				1.5					6.5	1.5	
2- 3				10.0	1.0	4.5	0.5		7.0	8.0	8.5	3.0	2.5	8.5		2.0					2.0	6.5	
3- 4	5.0		3.0	3.0	9.5	4.5	0.5		7.0	6.5		3.5	5.0	5.0		2.0					7.0	2.0	
4- 5	11.0	5.5		12.5		4.5	0.5		6.5	4.5	4.5	3.5	8.0	1.5		2.5					2.5	7.5	
5- 6	2.0			5.0		4.5	0.5		6.0	3.0	10.0	4.0				3.0					7.5	3.0	9.0
6- 7	8.5		2.0		3.0	4.5	0.5		6.0	1.0	0.5	4.0				3.0					3.0	8.0	
7- 8				7.0	11.5	4.0	0.0		5.5	10.5	5.5	4.5	2.5		2.5	3.5		3.5			8.5	3.5	
8- 9	5.5	8.5				4.0	0.0		5.0	8.5	11.0	4.5	5.5	9.0		4.0				1.5	4.0	9.0	
9-10	12.0		1.5	9.0		4.0	8.0		5.0	7.0	1.5	5.0	8.0	6.0	6.0	4.0				4.0	9.0	4.5	
10-11	3.0			2.0	4.5	4.0	8.0		4.5	5.0	7.0	5.0		2.5		4.5				6.5	4.5	9.5	10.0
11-12	9.0			11.0		3.5	7.5		4.0	3.0	12.0	5.5				5.0			5.0		0.0	5.0	
12-13	0.0	11.5	1.0	4.0		3.5	7.5		4.0	1.5	3.0	5.5	2.5			5.0					5.5	0.5	
13-14	6.5					3.5	7.5		3.5	11.0	8.0	6.0	5.5			5.5			1.5		1.0	5.5	
14-15				6.0	6.0	3.5	7.5		3.0	9.0		6.0	8.0			6.0					6.0	1.0	
15-16	3.5		0.0			3.5	7.5		3.0	7.0	4.0	6.5		7.0		6.0	0.0				1.5	6.5	11.5
16-17	10.0		12.0	8.0		3.0	7.0		2.5	5.5	9.5	6.5	0.0	3.5		6.5	0.5				7.0	2.0	
17-18	1.0			1.0		3.0	7.0		2.0	3.5	0.0	7.0	3.0	0.5		6.5	0.5				2.5	7.0	
18-19	7.0			10.0	8.0	3.0	7.0		2.0	2.0	5.5	7.0	5.5			7.0	1.0			0.5	7.5	2.5	
19-20			11.0	3.0		3.0	7.0		1.5	0.0	10.5	7.5	8.0				1.5			3.0	3.0	8.0	
20-21	4.5			12.5		3.0	7.0		1.5	9.5	1.0	7.5					1.5			5.5	8.0	3.5	
21-22	10.5			5.0	1.0	2.5	6.5		1.0	7.5	6.5	8.0	0.0	8.0			2.0				3.5	8.5	
22-23	1.5		10.5		9.5	2.5	6.5	12.5	0.5	6.0	12.0	8.0	3.0	4.5	2.0		2.5		7.0		9.0	4.0	
23-24	8.0			7.0		2.5	6.5	12.0	0.5	4.0	2.5	8.5	5.5	1.0			2.5				4.5	9.5	
24-25						2.5	6.5	12.0		2.5	7.5	8.5	8.0		5.0		3.0	2.5	3.0		9.5	5.0	
25-26	5.0		10.0	9.0	3.0	2.5	6.5	11.5		0.5		9.0					3.5				5.0	0.5	
26-27	11.5			2.0	11.5	2.0	6.0	11.0		10.0	3.5	9.0	0.5				3.5				0.5	5.5	
27-28	2.5			11.5		2.0	6.0	11.0		8.0	9.0	9.5	3.0	8.5			4.0				6.0	1.0	
28-29	8.5		9.0	4.0		2.0	6.0	10.5		6.5		9.5	5.5	5.5			4.0				1.5	6.0	
29-30					4.5	2.0	6.0	10.0		4.5	5.0	10.0	8.5	2.0			4.5			2.0	6.5	1.5	
30-31	6.0			6.0		2.0	6.0	10.0		2.5	10.0	10.0					5.0			4.5	2.0	7.0	

	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA
MAX	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4
MIN	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9
DUR	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4	5
TOT																							
	(S)		(S)		(S)				(S)		(S)		(S)		(S)						(S)		
0- 1		7.5							8.5	11.0			2.0	0.0	3.5			9.0	1.5	2.5	11.5		
1- 2		11.0	4.0	2.5			5.5					12.5	1.0	4.5	1.0				9.5		6.0		
2- 3			7.5				9.5	11.5		2.0		3.5		2.0			9.0	3.5		9.5	0.5		7.5
3- 4			10.5		4.0	6.0			5.0	1.5		2.5			3.0	11.5		8.0		4.0			
4- 5		7.0				11.5	4.0			1.0		1.0		4.0	0.5				1.5		7.5		
5- 6		10.5		6.0			8.5	8.0		0.0	12.0	0.0	4.0	1.5	12.0			3.0	9.0	11.0	1.5		
6- 7			7.0								11.0		2.5		2.5			7.5		5.0		7.5	
7- 8			10.5		7.5				11.5				1.5	3.5				12.0			8.5	10.5	11.5
8- 9		7.0				5.0	7.5	4.5			2.0	11.5	0.5	0.5	4.0	11.5		2.0	1.0	12.0	3.0		
9-10	4.0	10.0		9.0		11.0	12.0				1.5	3.0		12.5	1.5			6.5	9.0	6.5			
10-11			6.5						7.5	12.5	1.0	2.0		2.5				11.0		1.0	10.0		
11-12			10.0		10.5		6.5			12.0	0.0	0.5	12.0		3.5			1.0			4.5		9.0
12-13		6.5					11.0	11.0		11.0			3.5	4.5	1.0		7.0	5.5	0.5	8.0			
13-14		10.0		12.0		4.5			4.0	2.5			2.0	2.0		11.5		10.0	8.5	2.5	11.5		
14-15	5.0		6.5			10.5	5.5			2.0		12.5	1.0		3.0			0.5			6.0		
15-16			9.5				9.5	7.0		1.5		3.5		4.0	0.5			5.0		9.5	0.0	9.5	
16-17		6.0								0.5	12.5	2.5		1.0	12.0			9.5	0.0	3.5			
17-18		9.5					4.5		10.5	0.0	12.0	1.5			2.0				8.0		7.0		
18-19			6.0			4.0	8.5	3.5				0.0	4.0	3.0				4.0		10.5	1.5		
19-20	6.5		9.5			10.0					2.5		2.5	0.5	4.0			8.5		5.0			
20-21		6.0					3.0		6.5		2.0		1.5	12.0	1.5						8.5		10.0
21-22		9.0					7.5				1.5	12.0	0.5	2.5				3.0	7.5	12.0	3.0		
22-23			5.5				12.0	10.0		12.5	0.5	3.0			3.5		5.0	7.5		6.5			
23-24			9.0			3.5			3.0	12.0	0.0	2.0		4.5	1.0			12.0		0.5	10.0	8.5	
24-25	7.5	5.5	12.5			9.5	6.5					0.5	12.0	2.0				2.5			4.0	11.5	7.5
25-26		9.0					11.0	6.0		2.5			3.5		2.5		12.5	7.0	7.5	7.5			
26-27		12.0	5.5							2.0			2.0	3.5	0.0			11.5		2.0	11.0		
27-28			8.5				5.5		9.5	1.5		12.5	1.0	1.0	4.5			1.5			5.5		
28-29		5.0	12.0			3.0	10.0	2.5		0.5	12.5	3.5			2.0			6.0		9.0			
29-30	8.5	8.5				9.0				0.0	11.5	2.5		3.0				10.5	7.0	3.5			11.5
30-31		12.0	5.0				4.5		5.5			1.5		0.5	4.0			0.5			7.0		

	SX CMA	TU CMA	TZ CMA	TZ CMA	UU CMA	XZ CMI	AK CMI	RW CAP	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS
MAX	10.3	9.7	9.8	9.8	10.0	9.7	10.1	9.8	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1
MIN	11.4	10.7	10.5	10.5	12.5	10.2	11.5	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9
DUR	4	4	4	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	4	4	5
TOT				(S)										(S)								(S)	
0- 1			8.0										2.5	6.5		10.5		4.5	1.5				
1- 2	11.5					7.5					8.0	6.5	1.5	5.5	11.0	3.0	4.0	8.0	7.5	11.0		11.5	
2- 3				7.0		11.0	9.5		1.0				0.5	4.5	6.0	11.5		12.0			6.0		5.0
3- 4							12.5			0.0	3.5		7.0	3.5	1.0	4.0	0.5			5.0		0.5	
4- 5										5.0		0.0	6.0	2.0									
5- 6		8.0				8.5				9.5		9.0	5.0	1.0	9.5	5.0			1.0		8.0		3.5
6- 7	8.5	11.0				12.5	8.5						4.0	0.0	4.0				7.0			2.5	
7- 8							11.5						3.0	7.0		6.0		3.0					
8- 9												2.5	2.0	5.5				7.0		11.0	10.5		2.5
9-10						10.0		3.0	4.0			11.5	1.0	4.5	7.5	7.0		10.5				5.0	
10-11					10.0		7.5			4.5	9.5		7.5	3.5	2.5		9.0		0.5	5.0			
11-12							10.5			9.0			6.5	2.5		8.0			6.5		12.5		1.0
12-13						7.5			0.0		5.0	5.0	5.5	1.5	11.0	0.0	5.5		12.5			7.0	
13-14						11.0							4.5	0.5	5.5	9.0					1.5		
14-15	11.0	8.5					6.5				0.5		3.5	7.0	0.5	1.0	1.5	2.0					
15-16		11.5					9.5						2.5	6.0		10.0		5.5	0.0	11.0		9.0	11.0
16-17						8.5				3.5		7.5	1.0	5.0	9.0	2.0		9.5	6.0		3.5		
17-18						12.5				8.5			0.0	4.0	4.0	11.0			12.0	5.0			
18-19													7.0	3.0		3.0						11.0	10.0
19-20	8.0		10.5				8.5		3.0		11.0	1.0	5.5	2.0	12.5	12.0					5.5		
20-21						10.0	12.0					9.5	4.5	1.0	7.5	4.0						0.0	
21-22				9.5							6.5		3.5	7.5	2.0		10.5	1.0	5.5				8.5
22-23										3.0			2.5	6.5		5.0		4.5	11.5	11.0	7.5		
23-24		9.0			10.0	7.5	8.0			8.0	2.0	3.5	1.5	5.5	10.5		6.5	8.5				2.0	
24-25		12.0				11.0	11.0					12.0	0.5	4.5	5.5	6.0		12.0		5.0			7.5
25-26													7.0	3.5	0.5		2.5				9.5		
26-27								2.0	6.0				6.0	2.5		7.0			5.5			4.0	
27-28	11.0					8.5	7.0					5.5	5.0	1.0	9.0				11.0				6.0
28-29						12.5	10.0			2.5			4.0	0.0	3.5	8.5					11.5		
29-30									2.0	7.5			3.0	7.0		0.5		3.5		11.0		6.0	
30-31										12.0	8.5		2.0	6.0	12.0	9.5		7.0			0.5		5.0

	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	V CRT	Y CYG
MAX	6.7	8.8	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.5	7.0
MIN	9.8	9.8	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.2	7.6
DUR	4	4	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	6
TOT	2																						
				(S)							(S)		(S)		(S)		(S)				(S)		
0- 1		5.0	6.5	1.5		5.0	7.0	3.5	12.0	10.5		12.0					10.5						
1- 2		2.5	2.5	7.5	6.0	5.0		7.5	1.0		0.5		0.5		0.5	10.0		4.0					
2- 3	5.5	0.5	8.5	3.5		4.5		11.5	3.5		11.0		0.5	11.5			10.0		4.0				6.0
3- 4			4.5	9.5		4.0			5.5	12.5					12.0	10.0							
4- 5			0.5	5.5		4.0			7.5	11.0						12.5					12.0		
5- 6			6.5	1.5		3.5	4.5		10.0	10.0							12.0		1.5				6.0
6- 7			2.5	7.5		3.0			12.0		0.0		10.5			12.0							
7- 8	5.0	10.0	8.5	3.5		3.0		3.0	1.0		10.5		10.5	0.5			12.0						
8- 9		7.5	4.5	9.5	6.5	2.5	10.5	7.0	3.0	0.5			11.0		11.0	11.5		1.5					6.0
9-10		5.5	1.0	6.0		2.0		10.5	5.0	11.0			11.5	12.0			11.5						
10-11		3.0	7.0	2.0		2.0	1.5		7.5		12.5		12.0			11.5			3.5	12.5			
11-12		0.5	3.0	8.0		1.5			9.5		11.0		12.0				11.0	12.5					6.0
12-13	5.0		9.0	4.0		1.0			11.5		10.0	0.5				11.0						11.5	
13-14			5.0	10.0		1.0	8.0		0.5	0.5		0.5					0.5		1.5				
14-15			1.0	6.0		0.5		2.0	3.0	10.5				10.5		0.0							6.0
15-16			7.0	2.0	7.0	0.0		6.0	5.0		0.5				11.5		10.5						
16-17		10.5	3.0	8.0				10.0	7.0		11.0			12.0		10.5							
17-18	4.5	8.0	9.0	4.0					9.5			10.5					10.0			12.0			6.0
18-19		5.5	5.0	0.0			5.5		11.5	11.5		10.5				10.0			3.5				
19-20		3.5	1.0	6.0					0.5	10.0		11.0					10.0					12.0	
20-21		1.0	7.5	2.5					2.5		0.5	11.5			0.5		12.5						5.5
21-22			3.5	8.5			11.5	1.5	5.0		10.5	12.0		11.0		12.0			1.0				
22-23	4.0		9.5	4.5	7.0			5.5	7.0	0.5		12.0			12.0		12.0						
23-24			5.5	0.5			3.0	9.5	9.0	11.0			0.5			12.0					12.5		5.5
24-25			1.5	6.5					11.0								11.5						
25-26		11.0	7.5	2.5					0.5		11.5					11.5							
26-27		8.5	3.5	8.5			9.0		2.5		10.0			0.0			11.5		3.0				5.5
27-28	4.0	6.0	9.5	4.5					4.5	0.5					11.0	11.0							
28-29		3.5	5.5	0.5			0.0	1.0	6.5	10.5			10.5	11.5			11.0						
29-30		1.5	1.5	6.5	7.5			5.0	9.0		1.0		10.5		12.5	0.5			1.0				5.5
30-31			7.5	2.5				8.5	11.0		11.0		11.0				0.0				12.0		

	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA
MAX	7.0	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8
MIN	7.6	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6
DUR	6	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3	4
TOT		2																2					
	(S)														(S)								
0- 1				3.5			2.0	2.0			2.5				3.0		2.0		6.0				5.0
1- 2	0.5			10.0			8.5	1.0			9.5						5.5				8.0		
2- 3			3.5	1.0						0.5	1.0			5.5			8.5				3.0	6.5	
3- 4				7.0		5.0	6.0	9.5			7.5		9.0			0.5			3.0			1.0	
4- 5	0.5							8.0				7.0	6.5		7.5		2.0			4.5			7.0
5- 6		7.0		4.5			3.0	6.5			5.5	3.5	3.5	0.0		9.0	5.0				7.0		
6- 7				10.5			9.5	5.0				0.0	1.0				8.5				2.5	4.5	
7- 8	0.0			1.5	9.5	5.0	0.5	3.5			4.0				2.0								0.0
8- 9				8.0	9.0		7.0	2.0	6.5								1.5	5.5					8.5
9-10					8.0			1.0			2.0			4.5			5.0				6.5	7.5	
10-11	0.0			5.0	7.5		4.5			6.0	8.5	7.5				1.5	8.5			3.0	1.5	2.5	
11-12					6.5	4.5		9.5	2.5		0.0	4.0	9.5		6.5		12.0			8.0			2.0
12-13			2.0	2.5	6.0		2.0	8.0			7.0	0.5	7.0				1.5						10.5
13-14	0.0			8.5	5.0		8.0	6.5					4.0	8.5			5.0	1.0			5.5	5.5	
14-15		10.5			4.5			5.0			5.0		1.5		1.0		8.5				0.5	0.5	
15-16			10.0	5.5	3.5	4.5	5.5	3.5									11.5						3.5
16-17					3.0			2.5			3.0	7.5		3.5			1.5			2.0			12.0
17-18				3.0	2.0		3.0	1.0			10.0	4.0				2.5	5.0			6.5	5.0	3.5	
18-19				9.0	1.5		9.5				1.0	1.0			5.5		8.0						
19-20		0.0		0.5	0.5	4.5	0.5	9.5			8.0		10.0				11.5						5.5
20-21				6.5			7.0	8.0					7.5	7.5			1.5					6.5	
21-22								6.5		5.0	6.0		4.5		0.0		4.5				4.0	1.5	
22-23			1.0	3.5			4.0	5.0				8.0	2.0				8.0			1.0			
23-24				10.0		4.5		3.5			4.0	4.5		2.5			11.5		5.5	5.5			7.0
24-25				1.0			1.5	2.5				1.0				3.5	1.0				8.0	4.5	
25-26			8.5	7.0			8.0	1.0	7.5		2.5				4.5		4.5				3.0		
26-27											9.0						8.0		2.0				0.0
27-28				4.5		4.5	5.5	9.5			0.5			6.5			11.5					8.0	9.0
28-29		3.5		10.5				8.0	3.5		7.0	8.0	8.0				1.0			0.0	7.0	2.5	
29-30				1.5			3.0	6.5				5.0	5.0		8.5		4.5			4.5	2.5		
30-31				8.0			9.0	5.0			5.5	1.5	2.5	1.5			8.0						2.0

	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC
MAX	10.0	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9
MIN	10.9	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3
DUR	3	5	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4
TOT		1				1			1			1											
				(S)				(S)										(S)				(S)	
0- 1	4.5						5.5	9.5						0.5			9.0				0.5	4.0	
1- 2	6.5	2.0		10.0		8.0	5.0	9.0			5.0						9.0		9.5		7.0	3.5	
2- 3	9.0				2.5		4.0	8.0			0.5						9.0				6.0	2.5	
3- 4	11.5		1.0		7.5		11.0	7.0		7.0							8.5				5.5	1.5	
4- 5	1.0				12.0		10.0	6.0				0.0					8.5	12.5	11.5	10.0	4.5	0.5	
5- 6	3.0						9.0	5.5							3.0	9.0	8.0	12.0		11.0	3.5	7.5	
6- 7	5.5		7.5				8.5	4.5			2.5						8.0	12.0		12.5	2.5	6.5	1.5
7- 8	8.0						7.5	3.5								10.5	8.0	12.0			1.5	5.5	3.5
8- 9	10.5				2.5		6.5	10.5	10.5	6.0			2.0				7.5	11.5			1.0	4.5	5.0
9-10		12.5			7.0	3.5	6.0	9.5		12.0						11.5	7.5	11.5	9.5		7.5	3.5	7.0
10-11	2.0				12.0		5.0	9.0			5.0							11.0			6.5	3.0	8.5
11-12	4.5			5.0			4.0	8.0	7.5		0.5		4.0					11.0			5.5	2.0	10.5
12-13	7.0	7.5					11.0	7.0										11.0	11.0		5.0	1.0	
13-14	9.5						10.0	6.5		5.5		2.0						10.5			4.0	0.0	
14-15	12.0			11.0	2.5	8.5	9.0	5.5	4.0	11.5					1.5			10.5			3.0	7.0	
15-16	1.0	3.0			7.0		8.5	4.5			2.5							10.0			2.0	6.0	
16-17	3.5		2.0		12.0		7.5	3.5										10.0		10.5	1.0	5.0	
17-18	6.0						6.5	10.5										10.0	9.0	11.5	0.5	4.0	
18-19	8.5						6.0	9.5		5.0						9.0		9.5		12.5	7.0	3.0	
19-20	11.0		8.5				5.0	9.0		11.0	5.0			2.0				9.5			6.0	2.5	
20-21	0.0				2.0		4.0	8.0			0.5					10.0		9.0	11.0		5.5	1.5	0.5
21-22	2.5				7.0		11.0	7.0										9.0			4.5	0.5	2.5
22-23	5.0				11.5	4.5	10.0	6.5				3.5	0.5			11.0		9.0			3.5	7.5	4.5
23-24	7.5						9.5	5.5										8.5			2.5	6.5	6.0
24-25	10.0			6.0			8.5	4.5		10.0	2.5					12.5	12.5	8.5			1.5	5.5	8.0
25-26	12.5						7.5	3.5					2.5				12.0	8.0	9.0		0.5	4.5	9.5
26-27	1.5	8.5			2.0		6.5	10.5						0.5			12.0	8.0			7.5	3.5	11.5
27-28	4.0			12.0	7.0	9.5	6.0	10.0									12.0	8.0			6.5	2.5	
28-29	6.5				11.5		5.0	9.0	12.0		5.0		5.0				11.5	7.5	10.5	10.5	5.5	2.0	
29-30	9.0	4.0	3.0				4.0	8.0		9.5	0.5						11.5	7.5		11.5	5.0	1.0	
30-31	11.5						11.0	7.0							3.5		11.0				4.0	0.0	

	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	VZ LEO	T LMI	Z LEP	RR LEP	SS LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON	BO MON	U OPH	SX OPH	V508 OPH
MAX	8.5	10.5	10.5	9.5	11.4	10.6	10.2	11.0	10.2	10.4	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	10.8	5.8	10.5	10.1
MIN	9.5	11.0	11.0	12.7	12.7	11.7	12.6	12.5	10.9	11.3	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3	12.1	6.5	11.2	10.7
DUR	4	5	5	5	4	4	6	4	4	6	4	5	5	4	5	5	5	5	4	5	5	5	3
TOT			(S)													(S)	1						
0- 1					10.5	10.5											9.0						
1- 2			9.5									3.0	2.0	8.0									
2- 3	8.0	4.0							10.5		12.0						6.5		8.0				0.0
3- 4				7.5					8.5			0.0	0.5										1.0
4- 5			11.5						6.5						9.5								1.5
5- 6		6.0			11.5						9.0								6.5				2.5
6- 7			0.5																				3.5
7- 8	3.5																		11.5	10.0			4.0
8- 9		8.5		9.0						1.0	6.0												5.0
9-10			2.5																				
10-11	8.5													1.0					9.5				
11-12		10.5				8.0																	
12-13			4.5			10.0			12.0					5.5									0.0
13-14				10.5		12.5			10.0										8.0				1.0
14-15		12.5							8.0			8.5		9.5									1.5
15-16	4.0		6.5						6.0		10.0												2.5
16-17		1.5										6.0				9.5			6.5	7.5			3.5
17-18																					0.0		4.0
18-19	9.0		8.5	12.0							7.0	3.5							11.0				5.0
19-20		3.5															10.5						
20-21												0.5											
21-22			10.5														8.0		9.5				
22-23		5.5													7.5						1.0		0.0
23-24	4.5					7.5			12.0					2.5			6.0						1.0
24-25						10.0			10.0									7.0	8.0				1.5
25-26		7.5				12.0			8.0		11.0			7.0									2.5
26-27	9.5		1.5				7.0		6.0									7.5					3.5
27-28								12.5												10.5	1.5	1.5	4.0
28-29		9.5						12.5			8.0							8.0					5.0
29-30			4.0				7.5	12.0							11.5				11.0				
30-31				7.0				12.0					7.5					9.0					

	V839 OPH	1010 OPH	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI	GU ORI	GU ORI	U PEG	U PEG	TY PEG	AQ PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	Z PER	RT PER
MAX	8.8	6.2	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	9.9	10.6
MIN	9.4	7.0	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0	12.4	12.0
DUR	3	4	4	3	3	5	3	4	3	3	4	4	3	3	6	12	3	3	3	2	4	6	4
TOT																5						2	
					(S)					(S)		(S)		(S)				(S)					
0- 1				11.0	5.5	7.0			6.5	11.0		9.0	0.0	4.5			7.0	2.5	0.5	4.0	10.5		11.0
1- 2	4.5		7.5	7.0	12.0	6.0	5.5		11.0	6.5		8.0	3.0	7.5	7.0		0.5	4.5	3.5		10.0		7.5
2- 3	0.0				8.5	4.5			6.5	11.0	12.0	6.5	6.0	1.5			2.5	6.5	6.5	7.0	9.5		4.0
3- 4				10.0	5.0				11.0	6.5	10.5	5.0	0.0	4.5			4.5	8.5	2.5	0.5	9.0		0.5
4- 5	1.0			6.0	11.5		8.0		6.5	11.0	9.0		3.0	7.5	9.5		6.5	2.0	5.5	10.5	8.5		
5- 6					7.5				11.0	6.5	8.0		6.0	1.5			8.5	4.0	1.5	3.5	8.0		
6- 7	2.0			9.0					6.5	11.0	6.5	12.0	0.0	4.5		8.0	1.5	6.0	4.5		7.0		10.0
7- 8				5.5	10.5		10.5		11.0	6.5	5.0	10.5	3.0	7.5			3.5	8.0	1.0	7.0	6.5		6.5
8- 9	3.5		7.0	12.0	7.0				6.5	11.0		9.0	6.0	1.5			6.0	1.5	3.5		6.0		2.5
9-10				8.0					11.0	6.5		8.0	0.0	4.5			8.0	3.5	6.5	10.0	5.5		
10-11	4.5			4.5	9.5				6.5	11.0	12.0	6.5	3.0	7.5			1.0	5.5	3.0	3.0	5.0	1.0	
11-12	0.0			11.0	6.0				11.0	6.5	10.5	5.0	6.0	1.5			3.0	7.5	6.0		4.5		12.0
12-13				7.5	12.5			5.0	6.5	11.0	9.0		9.0	4.5			5.0	1.0	2.0	6.5	3.5		8.5
13-14	1.0				8.5				11.0	6.5	8.0		3.0	7.5			7.0	3.0	5.0		3.0	2.5	5.0
14-15				10.0	5.0				6.5	11.0	6.5	12.0	6.0	1.5			0.5	5.0	1.0	9.5	2.5		1.5
15-16	2.0		6.5	6.5	11.5	12.0	4.5	8.5	11.0	6.5	5.0	10.5	9.0	4.5			2.5	7.0	4.0	2.5	2.0		
16-17					8.0	11.0			6.5	11.0		9.0	3.0	7.5			4.5	0.5	0.0		1.5	4.0	
17-18	3.0			9.0		10.0			11.0	6.5		8.0	6.0	1.5			6.5	2.5	3.0	6.0	1.0		11.0
18-19				5.5	10.5	8.5	7.0	12.0	6.5	11.0	12.0	6.5	9.0	4.5			0.0	4.5	6.0		0.0		7.5
19-20	4.5			12.0	7.0	7.5			11.0	6.5	10.5	5.0	3.0	7.5			2.0	6.5	2.0	9.0		5.5	3.5
20-21			12.5	8.5		6.5			6.5	11.0	9.5		6.0	1.5			4.0	8.5	5.0	2.5			0.0
21-22	5.5			4.5	10.0	5.0	9.5		11.0	6.5	8.0		9.0	4.5			6.0	2.0	1.5				
22-23	1.0		6.0	11.0	6.0	4.0			6.5	11.0	6.5	12.0	3.0	7.5			8.0	4.0	4.5	5.5		6.5	
23-24				7.5					11.0	6.5	5.0	10.5	6.0	1.5			1.5	6.0	0.5				9.5
24-25	2.0	2.5			9.0		12.0		6.5	11.0		9.5	9.0	4.5			3.5	8.0	3.5	9.0			6.0
25-26				10.5	5.0				11.0	6.5		8.0	3.0	7.5			5.5	1.0	6.5	2.0		8.0	2.5
26-27	3.0	2.0		6.5	11.5				6.5	11.0	12.0	6.5	6.0	1.5	1.0		7.5	3.0	2.5				
27-28			12.0		8.0				11.0	6.5	10.5	5.0	8.5	4.0			1.0	5.5	5.5	5.0			
28-29	4.5	2.0		9.5					6.5	11.0	9.5		2.5	7.0			3.0	7.5	1.5			9.5	12.0
29-30			6.0	6.0	11.0				11.0	6.5	8.0		5.5	1.0	3.0		5.0	0.5	4.5	8.5			8.5
30-31	5.5	1.5		12.5	7.0				6.5	11.0	6.5	12.0	8.5	4.0			7.0	2.5	0.5	1.5			4.5

	RV PER	ST PER	XZ PER	BETA PER	Y PSC	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI
MAX	10.3	9.7	10.6	2.2	9.0	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9
MIN	12.7	13.2	12.7	3.5	12.0	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0
DUR	8	5	4	8	7	4	4	6	5	4	4	4	4	4	3	2	4	6	5	3	3	4	4
TOT		1						2						1									
							(S)						(S)								(S)		
0- 1		0.5											0.0		10.0	12.0	11.0			6.5	2.0	5.5	
1- 2					7.5	10.0							1.0		5.5		3.5			7.0	3.0	9.5	
2- 3													1.5		11.5					7.5	3.5		
3- 4							10.0			0.5			2.5		7.5		5.5			8.0	4.0	3.5	
4- 5			0.5							3.5			3.0		3.5					8.5	4.5	8.0	
5- 6	12.5	7.5	4.0		1.5	9.5			1.5		3.0			11.5	9.5		7.5			9.0	5.0	12.0	
6- 7			8.0	11.5							0.0				5.5					1.5	5.5	2.0	12.0
7- 8	11.5		11.5				9.0								11.5		9.0			2.0	6.0	6.0	11.5
8- 9										2.0				6.0	7.5					2.5	7.0	10.0	10.5
9-10	11.0			8.5		9.0		4.5				1.0			3.5	3.0	11.0			3.5	7.5	0.0	10.0
10-11												1.5			9.0	4.5	3.5			4.0	8.0	4.5	9.5
11-12	10.5						8.5					2.5			5.0	6.5				4.5	8.5	8.5	8.5
12-13			2.0	5.0					4.0	1.0		3.0			11.0	8.5	5.5			5.0	9.0	12.5	8.0
13-14	9.5	6.0	5.5			8.5				4.0	1.0				7.0	10.5				5.5	1.5	2.5	7.0
14-15			9.5												3.0	12.0	7.5			6.0	2.0	6.5	6.5
15-16	9.0			2.0			8.0								9.0					7.0	2.5	10.5	6.0
16-17					9.0										5.0		9.5			7.5	3.0	0.5	5.0
17-18	8.5					7.5				2.5			0.5		11.0					8.0	4.0	5.0	4.5
18-19							12.5		2.0				1.5		7.0		11.0			8.5	4.5	9.0	4.0
19-20	8.0						7.5						2.5	7.5	2.5		4.0			9.0	5.0		3.0
20-21			3.5		3.0	12.0					2.0		3.0		8.5					1.5	5.5	3.0	2.5
21-22	7.0	5.0	7.0							1.0					4.5		5.5			2.0	6.0	7.0	2.0
22-23			11.0				11.5							2.0	10.5					2.5	6.5	11.0	1.0
23-24	6.5														6.5	3.0	7.5			3.0	7.5	1.0	0.5
24-25						11.5									2.5	5.0			4.5	4.0	8.0	5.5	
25-26	6.0								4.5			0.5			8.5	6.5	9.5			4.5	8.5	9.5	
26-27		12.0					11.0	2.5		3.0		1.5			4.5	8.5		4.0	5.5	5.0	9.0		
27-28	5.5		1.5								2.5	2.0			10.5	10.5	11.5			5.5	9.5	3.5	
28-29			5.0			10.5						3.0			6.0	12.0	4.0	5.0	7.0	6.0	2.0	7.5	
29-30	4.5	3.5	8.5	10.0											12.0					6.5	2.5	11.5	
30-31			12.0				10.5			1.5				9.5	8.0		6.0	6.0	8.0	7.0	3.0	2.0	

	RV TRI	W UMA	W UMA	TX UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	VV VIR	AG VIR	AH VIR	AH VIR	AW VIR	AW VIR	AZ VIR	AZ VIR	Z VUL	AW VUL	AY VUL	BE VUL
MAX	11.4	9.1	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.8	10.8	11.0	11.0	7.4	10.8	11.0	9.9
MIN	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.9	11.9	11.8	11.8	9.2	11.9	12.9	11.4
DUR	4	3	3	6	3	3	1	3	3	4	4	4	4	4	4	3	3	3	3	6	5	4	5
TOT			(S)			(S)									(S)		(S)		(S)				
0- 1	7.5	0.0	4.0		4.0	8.0	7.5	2.0			8.5			11.5						1.5	5.5		
1- 2	1.5	0.0	4.0		5.5	1.0	2.5	11.0	0.5	7.5	10.0				12.0	0.5		1.0			1.0		
2- 3		0.0	4.0		7.0	2.5	7.0	3.5	6.0		11.0		11.0	12.5									7.5
3- 4	8.0	0.0	4.0		0.0	4.5	1.5	12.5	11.0		12.5											8.5	
4- 5	2.0	0.0	4.0		1.5	6.0	6.0	5.0			1.0								0.0		6.5		
5- 6		0.5	4.5		3.0	7.5	1.0				2.0										1.5		
6- 7	8.5	0.5	4.5		4.5	0.5	5.0	6.5			3.5						12.0						
7- 8	2.5	0.5	4.5		6.0	2.0	0.0				4.5												
8- 9		0.5	4.5		7.5	3.5	4.5	8.0	8.5	5.0	5.5							0.5			7.0	4.5	
9-10	8.5	0.5	4.5		0.5	5.0	8.5	0.5			7.0			10.5		12.5					2.5		
10-11	2.5	0.5	4.5		2.0	6.5	3.5	9.5		12.5	8.0				11.0								1.5
11-12		0.5	4.5		3.5	8.0	8.0	2.0			9.5		11.0	11.5									
12-13	9.0	0.5	4.5		5.5	1.0	3.0	11.0	0.5		10.5	0.5			12.0						8.0		
13-14	3.0	0.5	4.5	0.0	7.0	2.5	7.0	3.5	6.0		11.5			12.5							3.0	0.0	4.0
14-15		0.5	4.5		8.5	4.0	2.0	12.0	11.0		0.5												
15-16	9.5	0.5	4.5		1.5	5.5	6.5	4.5		2.5	1.5						0.0	0.5					
16-17	3.5	0.5	4.5		3.0	7.0	1.0				2.5										8.5		6.5
17-18		0.5	4.5		4.5	0.0	5.5	6.0		10.0	4.0									6.0	4.0		
18-19	9.5	0.5	4.5		6.0	1.5	0.5				5.0					0.5		12.5					
19-20	4.0	0.5	4.5		7.5	3.0	4.5	7.5	8.5		6.0												
20-21		0.5	4.5		0.5	4.5	9.0	0.0			7.5		11.0	10.5								6.0	
21-22	10.0	0.5	4.5		2.0	6.0	4.0	9.0			8.5				11.0						5.0		
22-23	4.0	0.5	4.5		3.5	8.0	8.0	1.5		0.0	10.0			11.5				0.5		3.5	0.0		
23-24		0.5	4.5		5.0	1.0	3.0	10.5	0.5		11.0				12.0								
24-25	10.5	0.5	4.5		6.5	2.5	7.5	3.0	6.0	7.5	12.0												1.0
25-26	4.5	0.5	4.5	6.5	8.0	4.0	2.5	12.0	11.0		1.0										5.5	1.5	
26-27		0.5	4.5		1.0	5.5	6.5	4.5			2.0					12.0			1.0		1.0		
27-28	11.0	0.5	4.5		2.5	7.0	1.5				3.0									1.5			3.5
28-29	5.0	1.0	5.0	8.0	4.0	8.5	6.0	6.0			4.5												
29-30		1.0	5.0		5.5	1.5	0.5				5.5		11.0				12.5	0.0			6.5		
30-31	11.0	1.0	5.0		7.0	3.0	5.0	7.5	8.5		7.0										1.5		6.0

	BO VUL	BS VUL	BT VUL	BU VUL	CD VUL
MAX	10.4	11.0	11.8	10.6	11.5
MIN	13.3	11.5	12.5	11.4	12.6
DUR	4	3	3	3	4
TOT					
0- 1	3.5	0.5		1.5	1.0
1- 2				4.5	
2- 3	2.5			8.0	2.5
3- 4			0.5		
4- 5	1.0	7.5	4.0	1.0	3.5
5- 6		6.0	7.5	4.0	
6- 7		5.0		7.5	4.5
7- 8		4.0			
8- 9		2.5		0.5	6.0
9-10		1.5		4.0	
10-11		0.5		7.0	7.0
11-12			0.5		
12-13			3.5	0.0	8.5
13-14			7.0	3.5	1.0
14-15		7.0		6.5	
15-16		6.0			2.0
16-17		5.0			
17-18		3.5		3.0	3.5
18-19		2.5		6.5	
19-20		1.5	0.0		4.5
20-21		0.5	3.5		
21-22			7.0	2.5	5.5
22-23				6.0	
23-24				9.0	7.0
24-25		7.0			
25-26		6.0		2.0	8.0
26-27		5.0		5.5	0.5
27-28		3.5		9.0	
28-29		2.5	3.0		2.0
29-30		1.5	6.5	1.5	
30-31		0.0		5.0	3.0

AAVSO Eclipsing Binary Ephemeris for November 2015 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	DS AND	RY AQR	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.1	11.3	8.6	10.8	10.8	8.8	10.7	10.3	9.3	9.2	9.2	9.0	10.6	9.0	10.1
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.6	11.7	9.5	11.4	11.4	10.1	12.0	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1
DUR	3	11	8	4	3	3	3	4	4	3	4	4	4	5	3	3	7	3	3	7	4	4	3
TOT		2																		3			
							(S)		(S)				(S)						(S)				
0- 1	12.0		8.5			1.5	5.5	9.5		1.0	1.0	10.5			0.5								7.5
1- 2	3.0			8.0		1.5	5.5	9.0		10.0	6.0	10.5			3.0								3.0
2- 3	9.5	2.5		1.0	6.5	1.5	5.5	9.0		8.5	11.5	11.0			5.5								8.0
3- 4	0.5		8.0	10.0		1.5	5.5	8.5		6.5	2.0	11.0				6.5		0.0					3.5
4- 5	6.5			3.0		1.5	5.0	8.0		5.0	7.5	11.5				3.0		0.5			4.5		8.5
5- 6	13.0			12.5		1.0	5.0	8.0		3.0	12.5	11.5			0.5			1.0					4.0
6- 7	4.0	5.5	7.0	5.0	8.0	1.0	5.0	7.5		1.5	3.0	12.0			3.0		1.5	1.0			1.0		9.5
7- 8	10.0					1.0	5.0	7.0		10.5	8.5	12.0	0.0		6.0			1.5					5.0
8- 9	1.5			7.0		1.0	5.0	7.0		9.0		12.5	0.5				4.5	1.5				1.0	0.5
9-10	7.5		6.5		1.0	0.5	4.5	6.5		7.0	4.5	12.5	0.5					2.0				3.5	5.5
10-11		8.0		9.0	9.5	0.5	4.5	6.0		5.5	9.5	13.0	1.0		0.5	4.0		2.5		1.0			1.0
11-12	5.0			2.0		0.5	4.5	6.0		3.5	0.5		1.0		3.0	0.5		2.5					6.5
12-13	11.0		6.0	11.5		0.5	4.5	5.5		2.0	5.5		1.5		6.0			3.0					2.0
13-14	2.0			4.0	3.0	0.5	4.5	5.0		11.0	11.0		1.5					3.5					7.0
14-15	8.0				11.5	0.0	4.0	5.0		9.5	1.5		2.0	5.0				3.5					2.5
15-16			5.0	6.0		0.0	4.0	4.5		7.5	7.0		2.0		0.5			4.0					8.0
16-17	5.5					0.0	4.0	4.0		6.0	12.0		2.5	4.0	3.5	5.0		4.5					3.5
17-18	11.5			8.0	4.5	8.0	4.0	4.0		4.0	3.0		2.5		6.0	1.5		4.5			2.5		8.5
18-19	3.0		4.5	1.0		8.0	4.0	3.5		2.0	8.0		3.0	3.5				5.0					4.0
19-20	9.0			10.0		7.5	3.5	3.0		0.5			3.0									2.5	9.0
20-21	0.0			3.0		7.5	3.5	3.0		9.5	4.0		3.5	2.5	0.5							5.0	4.5
21-22	6.5		4.0		6.5	7.5	3.5	2.5		8.0	9.5		3.5		3.5		0.5						0.0
22-23	12.5			5.0		7.5	3.5	2.0		6.0			4.0	2.0	6.0	6.0			0.0				5.5
23-24	3.5					7.0	3.5	2.0		4.5	5.0		4.0			2.5	4.0		0.5				1.0
24-25	9.5		3.5	7.0		7.0	3.0	1.5		2.5	10.5		4.5	1.0					1.0				6.0
25-26	1.0				8.0	7.0	3.0	1.0		1.0	1.0		4.5		1.0				1.0				1.5
26-27	7.0			9.0		7.0	3.0	1.0		10.0	6.5		5.0	0.0	3.5				1.5				7.0
27-28			2.5	2.0		7.0	3.0	0.5	12.5	8.5	11.5		5.0		6.0				2.0	0.0			2.5
28-29	4.5			11.5	1.0	6.5	2.5	0.0	12.0	6.5	2.5		5.5			7.0			2.0		4.0		7.5
29-30	10.5			4.0	9.5	6.5	2.5		11.5	5.0	7.5		5.5			3.5			2.5			1.5	3.0

	SS ARI	WW AUR	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM
MAX	10.1	5.7	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6
MIN	11.1	6.4	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8
DUR	3	5	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5
TOT	(S)		(S)		(S)		(S)				(S)		(S)		(S)		(S)						(S)
0- 1	2.5				8.5				8.5				10.5	0.0	11.5	12.0	1.5			5.0		10.5	1.5
1- 2	7.5			5.0	11.5		3.0			9.0			10.0		10.5	2.5			3.0	9.5		5.0	
2- 3	3.0	3.5		8.0				2.5	3.0		2.0		9.0		1.5		10.5	10.5			6.5		8.5
3- 4	8.5		10.0	11.5	4.5	4.5		8.5	7.5		12.0	12.5		12.0	0.5	11.5	0.5			4.5		12.0	2.5
4- 5	4.0				8.0				12.0	5.0		11.5	0.0	10.5		1.5	12.5		10.5	9.0		6.0	
5- 6	9.0			4.5	11.5		6.0		2.0			11.0		2.0			2.5					0.5	9.5
6- 7	4.5			8.0					6.5		8.5	10.5		1.0	12.0	10.5	0.0			3.5	6.0		4.0
7- 8	0.0	5.0		11.0	4.5	7.5		2.0	11.0	1.5		10.0			11.0	1.0	11.5	10.5		8.0		7.5	
8- 9	5.5		11.0		7.5			8.0		11.5		9.0			10.0	12.5	2.0			12.5		2.0	11.0
9-10	1.0			4.0	11.0		9.0		5.5		4.5	0.5	12.5	12.5	1.0	10.0				2.5			5.5
10-11	6.0			7.5					10.0			0.0	11.5	11.5		0.5	11.0			7.0	6.0	9.0	
11-12	1.5			10.5	4.0	11.0				8.0			11.0	10.0		12.0	1.5		1.0	11.5		3.0	12.5
12-13	6.5	6.0			7.0			1.5	4.5		1.0		10.5	1.5	13.0	2.0	13.0	10.0		2.0			6.5
13-14	2.0		12.5	3.5	10.5		12.5	7.5	8.5		11.0		9.5	0.0	11.5		10.5			6.5		10.0	1.0
14-15	7.5			7.0						4.0		13.0	9.0		10.5	11.5	0.5		8.5	11.0	5.5	4.5	
15-16	3.0			10.5	3.5				3.5			12.5	0.5		1.5	1.5	12.0			1.0			8.0
16-17	8.0				7.0				7.5		7.5	11.5	0.0	12.0	0.5		2.5			5.5		11.5	2.5
17-18	3.5	7.0		3.5	10.0			1.0	12.0	0.5		11.0		11.0		10.5		10.0		10.0		6.0	
18-19	9.0			6.5				7.0	2.0	10.5		10.5		2.0		1.0	11.5			0.0	5.0	0.5	9.5
19-20	4.5			10.0	3.0			12.5	6.5		3.5	9.5		1.0	12.5	12.5	2.0			4.5		13.0	4.0
20-21	9.5				6.5				11.0				13.0		11.0	10.0				9.0		7.5	
21-22	5.0		2.0	3.0	10.0				1.0	7.0		0.5	12.5		10.0	0.0	11.0					1.5	11.0
22-23	0.5	8.5		6.5				0.5	5.5				11.5	12.5	1.0	12.0	1.0	10.0		4.0	5.0		5.0
23-24	6.0			9.5	3.0			6.0	10.0		10.0		11.0	11.5	0.0	2.0	13.0			8.5	12.5	8.5	
24-25	1.5				6.0			12.0		3.0			10.5	10.5			10.0		6.5	13.0		3.0	12.0
25-26	6.5			2.5	9.5				4.5				9.5	1.5	13.0	11.0	0.5			3.0			6.5
26-27	2.0		3.5	6.0	13.0				9.0		6.5	13.0		0.5	11.5	1.5	12.0			7.5	4.5	10.0	1.0
27-28	7.0	9.5		9.5	2.5							12.5	0.5		10.5		2.5	9.5		12.0	12.5	4.5	
28-29	2.5			12.5	6.0			5.5	3.5	9.5		11.5			2.0	10.5				2.0			8.0
29-30	8.0			2.5	9.0			11.5	7.5		2.5	11.0		12.0	0.5	0.5	11.5			6.5		11.5	2.0

	R	RT	SX	TU	TZ	TZ	UU	XZ	AK	RW	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	V364
	CMA	CMA	CMA	CMA	CMA	CMA	CMA	CMI	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS
MAX	6.2	11.4	10.3	9.7	9.8	9.8	10.0	9.7	10.1	9.8	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2
MIN	6.8	12.9	11.4	10.7	10.5	10.5	12.5	10.2	11.5	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7
DUR	4	5	4	4	4	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	4
TOT						(S)										(S)							
0- 1	7.0			6.5				10.0	6.0					8.0	1.0	4.5	7.0	1.5		11.0	5.0	5.0	
1- 2	10.5		8.0	9.5					9.0				4.0		7.5	3.5	2.0	10.5	11.5		11.0		
2- 3		8.5		12.5					12.0						6.5	2.5		2.5					3.0
3- 4							6.0	7.0				2.0		2.0	5.5	1.5	10.5	11.5	7.5				
4- 5								11.0	5.0			6.5		10.5	4.5	0.5	5.0	3.5					
5- 6							10.0		8.0			11.5			3.5	7.0	0.0	12.5	4.0	2.0	4.5	11.0	5.0
6- 7		6.0	5.0					4.5	11.5						2.5	6.0		4.5		6.0	10.5		
7- 8		13.0						8.5						4.0	1.5	5.0	8.5		0.0	10.0		5.0	
8- 9	6.0							12.0			1.0		10.0	13.0	0.0	4.0	3.5	5.5					7.0
9-10	9.5		11.0	7.0		12.5			7.0			1.5			7.0	3.0							
10-11	12.5			10.0				6.0	10.5			6.0	5.5		6.0	2.0	12.0	6.5			4.0		
11-12		10.0			9.0			9.5				11.0		6.5	4.5	1.0	6.5				10.0		9.0
12-13										1.0			1.0		3.5	7.5	1.5	7.5	12.5	1.0		11.0	
13-14						8.0			6.5						2.5	6.5				5.0			
14-15			8.0					7.0	9.5					0.0	1.5	5.5	10.0	8.5	9.0	8.5		5.0	11.0
15-16		7.0			5.0			11.0	12.5		4.0	1.0		9.0	0.5	4.5	5.0	1.0		12.5	3.5		
16-17							6.0					5.5			7.0	3.5		9.5	5.0		9.5		0.0
17-18	8.0							4.5	5.5			10.5	11.5		6.0	2.5		2.0					
18-19	11.5			7.5			10.0	8.5	8.5		0.5			2.5	5.0	1.5	8.0	10.5	1.0				
19-20		4.5		10.5				12.0	11.5				7.0	11.5	4.0	0.0	3.0	3.0				11.0	2.0
20-21		11.5													3.0	7.0		11.5		3.5	3.0		
21-22								6.0	4.5			0.5	2.5		2.0	6.0	11.5	4.0		7.5	9.0	5.0	
22-23			11.0					9.5	7.5			5.0		5.0	1.0	4.5	6.5	12.5		11.5			4.5
23-24									11.0			9.5			7.5	3.5	1.5	5.0					
24-25		8.5													6.5	2.5							
25-26	7.0							7.0			3.0				5.5	1.5	10.0	6.0	10.0		3.0		6.5
26-27	10.5			5.0				11.0	6.5				13.0	7.5	4.5	0.5	4.5				8.5	11.5	
27-28			7.5	8.0					10.0						3.5	7.0		7.0	6.0	2.5			
28-29		5.5		11.0				4.5				4.5	8.5		2.5	6.0				6.5		5.5	8.5
29-30		12.5					6.0	8.5		0.0		9.0		1.0	1.5	5.0	8.0	8.0	2.5	10.0			

	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV
MAX	11.2	10.1	6.7	8.8	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6
MIN	11.7	10.9	9.8	9.8	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2
DUR	4	5	4	4	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4
TOT			2																				
	(S)					(S)							(S)		(S)		(S)		(S)				(S)
0- 1					3.5	9.0			6.5	12.5	0.0	12.5	9.5		11.5	9.0		10.5	8.0			11.5	
1- 2	8.5		3.5		10.0	5.0					2.0	11.5	8.5		12.0		9.5	7.5	10.5				10.5
2- 3		3.5			6.0	1.0					4.5	10.0	13.0	8.0	12.0	10.5		10.0	13.0			10.0	
3- 4				11.0	2.0	7.0			12.5		6.5	9.0	12.0	8.5	12.5		11.0	12.5	10.0				
4- 5	10.5			9.0	8.0	3.0				0.0	8.5		10.5	9.0	13.0	12.0		10.0	12.5				
5- 6		2.5		6.5	4.0	9.0	7.5		4.0	4.0	11.0	12.0	9.5	9.5			12.5	12.5	9.5			12.5	
6- 7			3.0	4.0	10.0	5.0				8.0	13.0	11.0	8.0	9.5				9.5	12.0		0.5		11.5
7- 8	12.5			1.5	6.0	1.0				12.0	2.0	10.0	12.5	10.0		9.5		12.0	9.5		11.5	11.0	
8- 9		1.0			2.0	7.0			10.0		4.0	8.5	11.5	10.5			10.0	9.0	12.0				10.0
9-10	1.5	12.5			8.0	3.0					6.5		10.0	11.0		11.0		11.5	9.0				
10-11					4.0	9.0			1.0		8.5	12.0	9.0	11.0			11.5	9.0	11.5				
11-12			3.0		0.0	5.0					10.5	10.5		11.5		12.5		11.5	8.5				12.5
12-13	3.5	11.0		11.5	6.5	1.5	8.0			3.5	12.5	9.5	12.0	12.0				8.5	11.0			12.0	
13-14				9.0	2.5	7.5			7.5	7.5	2.0	8.0	11.0	12.0	8.0		9.0	11.0	8.5				11.5
14-15				6.5	8.5	3.5				11.0	4.0	12.5	10.0	12.5	8.5	9.5		8.0	11.0		0.5	10.5	
15-16	5.5	10.0		4.5	4.5	9.5					6.0	11.5	8.5	13.0	9.0		10.5	10.5	8.0	1.0	11.5		10.0
16-17			2.5	2.0	0.5	5.5		13.0			8.0	10.0			9.5	11.5		8.0	10.5				
17-18					6.5	1.5	0.0	12.5			10.5	9.0	12.0		9.5		12.0	10.5	7.5				
18-19	7.5	8.5			2.5	7.5		12.5	5.0		12.5	8.0	10.5		10.0	13.0		13.0	10.0	12.0			12.5
19-20					8.5	3.5	8.0	12.0		2.5	1.5	12.5	9.5		10.5	8.5		10.0	12.5			11.5	
20-21					4.5	9.5		11.5		6.5	3.5	11.0	8.0		11.0		9.5	12.5	10.0				11.0
21-22	9.5	7.5	2.0	12.0	0.5	5.5		11.5	11.0	10.5	6.0	10.0	12.5		11.0	10.0		9.5	12.5			10.0	
22-23				9.5	6.5	1.5		11.0			8.0	8.5	11.5		11.5		11.0	12.0	9.5		0.0		
23-24				7.0	3.0	8.0		10.5	2.5		10.0		10.5		12.0	11.5		9.5	12.0		11.0		
24-25	12.0	6.0		4.5	9.0	4.0	0.5	10.0			12.5	12.0	9.0	8.0	12.5		12.5	12.0	9.0			13.0	
25-26				2.5	5.0	10.0		10.0			1.5	10.5	8.0	8.5	12.5			9.0	11.5				12.0
26-27	1.0		2.0		1.0	6.0	8.5	9.5	8.5	2.0	3.5	9.5	12.5	9.0		9.0		11.5	9.0			11.5	
27-28		4.5			7.0	2.0		9.0		6.0	5.5	8.5	11.0	9.5			10.0	8.5	11.5		2.0		10.5
28-29					3.0	8.0		9.0		10.0	8.0	13.0	10.0	9.5		10.5		11.0	8.5			10.0	
29-30	3.0				9.0	4.0		8.5			10.0	11.5	8.5	10.0			11.5	8.5	11.0				

AAVSO Eclipsing Binary Ephemeris for November 2015 all times in U.T.

	RV CRV	RV CRV	V CRT	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL
MAX	9.0	9.0	9.5	7.0	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6
MIN	10.0	10.0	10.2	7.6	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8
DUR	4	4	4	6	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4
TOT					2																2		
		(S)																(S)					
0- 1		11.0	10.5						4.5	0.5	4.0								4.5				
1- 2				5.5			5.0			6.5	2.5		4.5	3.5				3.5		1.0	6.0		
2- 3											1.0									4.5			
3- 4		11.0					2.5			4.0				1.5			5.5			7.5			
4- 5				5.0		7.5	8.5		4.5					8.0	5.0								3.5
5- 6										1.5	8.0				2.0					1.0			
6- 7		10.5			7.0		6.0			8.0	6.5			6.5		5.5	0.5			4.0	1.5		
7- 8			11.0	5.0							5.0					3.0			5.5	7.5			
8- 9							3.0		4.5	5.0	4.0			4.5		0.5		2.5					
9-10											2.5									0.5			
10-11				5.0			0.5	7.5		2.5	1.0			2.5	5.5		4.5			4.0			2.5
11-12							6.5	7.0							2.0					7.5			
12-13								6.0	4.5	0.0			4.0	0.5				6.5					
13-14				5.0			3.5	5.5		6.5	8.0			7.5						0.5			
14-15			11.5			6.5		4.5			6.5	4.5				6.0			6.5	4.0			
15-16							1.0	4.0		4.0	5.5			5.5		3.5		1.5		7.5		4.5	
16-17				5.0			7.0	3.0	4.0		4.0				6.0	1.0							1.5
17-18								2.5		1.5	2.5	0.5		3.5	2.5		3.5			0.5			6.0
18-19							4.5	2.0		7.5	1.0									4.0		1.5	
19-20	13.0		9.5	5.0				1.0						2.0				5.5		7.0			
20-21					0.5		1.5	0.5	4.0	5.0													
21-22			12.0				8.0				8.0									0.5			
22-23	12.5			4.5						2.5	6.5			6.5	6.0	6.5		0.5		3.5			0.5
23-24							5.0				5.5		3.5		2.5	4.0				7.0			5.0
24-25						5.5			4.0		4.0			5.0		1.5	2.5						
25-26	12.5			4.5			2.5			6.0	2.5									0.0			
26-27			10.0				8.5				1.0			3.0				4.5	0.0	3.5			
27-28										3.5										7.0			
28-29	12.0		12.5	4.5			6.0		4.0					1.0	6.5		6.5						
29-30					4.0					1.0	8.0			8.0	3.0					0.0			4.0

	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA
MAX	11.0	10.2	10.8	10.0	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5
MIN	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0
DUR	4	3	4	3	5	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4
TOT					1				1			1			1								
							(S)				(S)										(S)		
0- 1		6.0	10.5	0.5						2.5	6.5	8.5							8.5	11.0	7.0	12.5	
1- 2		0.5		3.0		9.5		2.0		1.5	5.5									11.0	7.0		
2- 3	1.5			5.5				6.5		8.5	4.5		3.0	2.5					9.5	10.5	6.5	8.5	
3- 4			3.5	8.0			0.5	11.5		7.5	4.0	5.5	9.0							10.5	6.5		
4- 5		4.0	12.5	10.5					5.0	7.0	3.0								11.0	10.0	6.5		
5- 6	5.5			13.0						6.0	2.0									10.0	6.0	10.5	
6- 7	0.5			2.0			7.0			5.0	9.0	2.0							12.0	10.0	6.0		
7- 8			5.5	4.5				2.0		4.0	8.0			0.5	0.0					9.5	5.5	6.5	8.5
8- 9		2.0		7.0				6.5		3.5	7.0		8.5			1.5		1.5		9.5	5.5	12.0	9.5
9-10	4.5			9.5	9.5			11.5	10.0	2.5	6.5									9.0			10.5
10-11				12.0						1.5	5.5									9.0		8.5	11.5
11-12		5.0	7.0	1.0		4.5				8.5	4.5			2.5		3.5			7.0	9.0	13.0		12.5
12-13				3.5	4.5					7.5	4.0									8.5	12.5		
13-14	4.0			6.0				1.5		7.0	3.0		7.5						8.0	8.5	12.5	10.0	
14-15			0.5	8.5		10.5		6.5		6.0	2.0									8.5	12.0		
15-16		3.0	9.0	11.0				11.0		5.0	9.0								9.5	8.0	12.0		
16-17				0.0			1.5			4.5	8.0			0.5	2.0					8.0	12.0	12.0	
17-18	3.0			2.5					6.0	3.5	7.5							0.0	10.5	7.5	11.5		
18-19			2.0	5.0						2.5	6.5		7.0							7.5	11.5	8.0	
19-20		1.0	10.5	7.5			8.0	1.5		1.5	5.5		13.0						11.5	7.5	11.5		8.5
20-21				10.0				6.0		8.5	4.5	10.0		2.5						7.0	11.0		9.5
21-22	2.5			12.5				11.0		7.5	4.0						1.0		13.0	7.0	11.0	10.0	10.5
22-23		4.0	4.0	1.5					11.0	7.0	3.0									6.5	10.5		11.5
23-24			12.5	4.0	10.0					6.0	2.0	7.0	6.5							6.5	10.5		12.5
24-25				6.5		5.5				5.0	9.0		12.5						6.5	6.5	10.5	12.0	
25-26	1.5			9.0				1.5		4.5	8.0			0.5	3.5	2.0				6.0	10.0		
26-27		2.0	5.5	11.0	5.5			6.0		3.5	7.5	3.5							7.5	6.0	10.0	8.0	
27-28				0.5		11.5		11.0		2.5	6.5									5.5	9.5		
28-29	5.5			3.0						2.0	5.5		6.0						9.0	5.5	9.5		
29-30	0.5	5.5		5.5	1.0		3.0			8.5	5.0		11.5	2.5				12.0			9.5	10.0	

	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	T LMI	Z LEP	RR LEP	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON
MAX	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4	9.5	10.6	10.2	11.0	10.2	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6
MIN	10.0	10.0	12.3	9.5	11.0	11.0	12.7	12.7	10.2	11.7	12.6	12.5	10.9	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3
DUR	3	3	4	4	5	5	5	4	3	4	6	4	4	7	4	5	5	4	5	5	5	5	4
TOT																					1		
		(S)				(S)														(S)			
0- 1	3.0	7.0		5.0	11.5				8.0			12.0			5.0								
1- 2	2.0	6.0				6.0		8.5	13.0		8.0	11.5										9.5	9.0
2- 3	1.0	5.0			0.5							11.5				6.5							
3- 4	0.0	4.0		10.0					8.0			11.5	11.5				5.0	0.0		7.5		10.5	
4- 5	7.0	3.0	1.5			8.0	8.5		13.0	7.5	8.5	11.0	9.5		12.0	4.0							7.5
5- 6	6.0	2.5	3.5	0.5	2.5					9.5		11.0	7.5				3.5	4.5				11.0	
6- 7	5.0	1.5	5.5					9.5	8.0	12.0		11.0	5.5			1.0							12.5
7- 8	4.5	0.5	7.0			10.0			13.0		9.0	10.5	3.5		9.0		2.5				12.0	11.5	6.0
8- 9	3.5	7.0	9.0	5.5	4.5							10.5											
9-10	2.5	6.5					10.0		8.0			10.5					1.5	13.0	6.0		9.5	12.5	10.5
10-11	1.5	5.5				12.0			13.0		9.5	10.5			6.0					12.0			
11-12	0.5	4.5			6.5			10.5				10.0					0.0				7.5		
12-13	7.5	3.5				1.0			8.0			10.0											9.0
13-14	6.5	2.5		1.0					13.0		10.0	10.0			3.0						5.0		
14-15	5.5	2.0			8.5		11.5					9.5	11.0										
15-16	4.5	1.0				3.0			8.0			9.5	9.0										7.5
16-17	4.0	7.5		6.0				11.5	13.0	7.0	10.5	9.5	7.0					1.5	10.0				
17-18	3.0	7.0			10.5					9.5		9.0	5.0		10.0								12.0
18-19	2.0	6.0	1.0			5.0			8.0	11.5		9.0	3.0	13.0				6.0					5.5
19-20	1.0	5.0	3.0				13.0		13.0		11.0	9.0											
20-21	0.0	4.0	4.5		12.5							9.0			7.0								10.5
21-22	7.0	3.0	6.5	1.5		7.0	5.5	12.5	8.0			8.5				4.5				6.0			
22-23	6.0	2.0	8.0		1.5				13.0		11.5	8.5											
23-24	5.0	1.5	10.0									8.5			4.0	1.5							9.0
24-25	4.5	0.5		6.5		9.0			8.0			8.0	13.0										
25-26	3.5	7.0			3.5				13.0		11.5	8.0	11.0	12.5									
26-27	2.5	6.5					6.5					8.0	8.5										7.0
27-28	1.5	5.5				11.0			8.0			7.5	6.5		11.0								
28-29	0.5	4.5			5.5				13.0	7.0	12.0	7.5	4.5				13.0			10.0	11.0		12.0
29-30	7.5	3.5		2.0		0.0				9.0		7.5						3.5					5.5

	BO	SX	V508	V839	1010	EQ	ER	ER	ET	FL	FT	FZ	FZ	GU	GU	U	U	TY	AQ	BB	BB	BX	DI
	MON	OPH	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG
MAX	10.8	10.5	10.1	8.8	6.2	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6
MIN	12.1	11.2	10.7	9.4	7.0	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8
DUR	5	5	3	3	4	4	3	3	5	3	4	3	3	4	4	3	3	6	12	3	3	3	2
TOT																			5				
								(S)					(S)		(S)		(S)				(S)		
0- 1				1.0			8.5	3.5			2.5	11.0	6.5	5.0	10.5	2.5	7.0			0.5	4.5	3.5	
1- 2			0.0				5.0	10.0		6.0		6.5	11.0	3.5	9.5	5.5	1.0	5.0		2.5	6.5	6.5	4.5
2- 3			1.0	2.0			11.5	6.5				11.0	6.5		8.0	8.5	4.0			4.5	0.0	2.5	
3- 4			1.5		0.5	11.5	7.5	2.5	12.5		6.0	6.5	11.0	12.0	6.5	2.5	7.0		2.0	6.5	2.0	5.5	8.0
4- 5			2.5	3.0			4.0	9.0	11.5	8.5		11.0	6.5	10.5	5.0	5.5	1.0	7.5			4.0	2.0	1.0
5- 6	8.0		3.5		0.5	5.5	10.5	5.5	10.5			6.5	11.0	9.5	3.5	8.5	4.0			2.0	6.0	5.0	
6- 7							7.0	12.0	9.0		10.0	11.0	6.5	8.0	2.5	2.5	7.0			4.0		1.0	4.5
7- 8							3.0	8.5	8.0	11.0		6.5	11.0	6.5	12.0	5.5	1.0			6.0	1.5	4.0	
8- 9							9.5	4.5	6.5			11.0	6.5	5.0	11.0	8.5	4.0			8.0	3.5	0.0	7.5
9-10				1.0			6.0	11.0	5.5			6.5	11.0	3.5	9.5	2.5	7.0			1.5	5.5	3.0	0.5
10-11						11.0	12.5	7.5	4.5			11.0	6.5	2.5	8.0	5.5	1.0			3.5	7.5	6.0	
11-12				2.0			9.0	3.5	3.0			6.5	11.0	12.0	6.5	8.5	4.0			5.5	1.0	2.0	4.0
12-13			1.0			5.0	5.0	10.0	2.0	3.0		11.0	6.5	11.0	5.0	2.5	7.0			7.5	3.0	5.0	
13-14			1.5	3.0			11.5	6.5				6.5	11.0	9.5	3.5	5.5	1.0			0.5	5.0	1.0	7.0
14-15	6.0		2.5				8.0	3.0				11.0	6.5	8.0	2.5	8.5	4.0		4.5	2.5	7.0	4.0	0.0
15-16			3.5				4.0	9.5		5.0		6.5	11.0	6.5	12.0	2.5	7.0			5.0	0.5	0.5	
16-17	11.5						10.5	5.5				11.0	6.5	5.0	11.0	5.5	1.0			7.0	2.5	3.0	3.5
17-18						11.0	7.0	12.0				6.5	11.0	3.5	9.5	8.5	4.0			0.0	4.5	6.0	
18-19				1.0			3.5	8.5		7.5		11.0	6.5	2.5	8.0	2.5	7.0			2.0	6.5	2.5	6.5
19-20						4.5	10.0	5.0				6.5	11.0	12.0	6.5	5.5	1.0			4.0		5.5	
20-21				2.0			6.0	11.5				11.0	6.5	11.0	5.0	8.5	4.0			6.0	2.0	1.5	
21-22							2.5	7.5		10.0		6.5	11.0	9.5	4.0	2.5	7.0				4.0	4.5	3.0
22-23			1.0	3.0			9.0	4.0			4.0	11.0	6.5	8.0	2.5	5.5	1.0			1.5	6.0	0.5	
23-24			1.5				5.5	10.5	12.0			6.5	11.0	6.5	12.0	8.5	4.0			3.5	8.0	3.5	6.5
24-25			2.5			10.5	12.0	6.5	10.5	12.5		11.0	6.5	5.0	11.0	2.5	7.0			5.5	1.5	6.5	
25-26	9.0		3.5				8.0	3.0	9.5		7.5	6.5	11.0	4.0	9.5	5.5	1.0		6.5	7.5	3.5	2.5	
26-27						4.5	4.5	9.5	8.5			11.0	6.5	2.5	8.0	8.5	4.0			1.0	5.5	5.5	2.5
27-28		0.5		1.0			11.0	6.0	7.0			6.5	11.0	12.5	6.5	2.5	7.0			3.0	7.5	1.5	
28-29							7.5	12.5	6.0		11.0	11.0	6.5	11.0	5.0	5.5	1.0			5.0	1.0	4.5	6.0
29-30				2.0			3.5	8.5	5.0	4.0		6.5	11.0	9.5	4.0	8.5	4.0	1.0		7.0	3.0	1.0	

	GP	Z	RT	RV	ST	XZ	BETA	Y	UZ	UZ	U	V505	1968	AO	CC	CC	RW	RZ	TY	WY	AC	AM	EQ
	PEG	PER	PER	PER	PER	PER	PER	PSC	PUP	PUP	SGE	SGR	SGR	SER	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU
MAX	10.2	9.9	10.6	10.3	9.7	10.6	2.2	9.0	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3
MIN	11.0	12.4	12.0	12.7	13.2	12.7	3.5	12.0	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0
DUR	4	6	4	8	5	4	8	7	4	4	6	5	4	4	4	4	4	3	2	4	6	5	3
TOT		2			1						2						1						
										(S)						(S)							
0- 1		10.5	1.0	4.0						5.5		2.5		12.0		11.5		4.0					8.0
1- 2							7.0		10.0							12.5		10.0		7.5	7.0	9.0	0.0
2- 3				3.5												0.5	4.0	6.0					1.0
3- 4		12.0	10.5		10.5					10.0			0.0					2.0		9.5	8.0	10.0	1.5
4- 5			7.0	2.5		3.0	4.0	5.0						0.5				8.0		2.5			2.0
5- 6			3.5			6.5			9.5									4.0	1.0	11.5	9.0	11.0	2.5
6- 7				2.0	2.5	10.0						0.0						9.5	3.0	4.0			3.0
7- 8							0.5			9.0								5.5	5.0		10.5	12.0	3.5
8- 9			13.0	1.5									1.5					1.5	7.0	6.0			4.0
9-10			9.5						9.0						12.0			7.5	8.5		11.5		5.0
10-11			5.5	1.0											0.5		11.0	3.5	10.5	8.0			5.5
11-12	9.5		2.0		9.5	0.5				8.5				1.5				9.5	12.5		12.5		6.0
12-13	9.0			0.0		4.5							0.5					5.5		10.0			6.5
13-14	8.5					8.0			8.5			2.5					5.5	1.5		2.5			7.0
14-15	8.0		11.5		1.0	11.5				13.0								7.0		11.5			7.5
15-16	7.0		8.0							8.0								3.0		4.5			0.0
16-17	6.5		4.5						12.5								0.0	9.0					0.5
17-18	6.0		1.0						7.5				2.0			12.0		5.0		6.0			1.0
18-19	5.5						12.0			12.0						0.5		1.0					2.0
19-20	5.0				8.0	2.0		6.5		7.5		0.5						7.0	1.5	8.0			2.5
20-21	4.5		10.5			5.5			12.0									3.0	3.0				3.0
21-22	3.5		7.0			9.5	8.5		7.0				0.5				13.0	9.0	5.0	10.0			3.5
22-23	3.0		3.0							11.5	3.5							5.0	7.0	2.5			4.0
23-24	2.5							0.5		6.5								0.5	9.0	12.0			4.5
24-25	2.0						5.5		11.5								7.5	6.5	10.5	4.5			5.5
25-26	1.5		12.5						6.5						12.0			2.5	12.5				6.0
26-27	1.0		9.0							11.0		3.0		0.0	0.5			8.5		6.5			6.5
27-28	0.0		5.5		6.5	3.5	2.5			6.0							2.0	4.5					7.0
28-29			2.0			7.0			10.5									0.5		8.0			7.5
29-30						11.0			6.0					12.5				6.5					8.0

	EQ TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TX UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	VV VIR	AG VIR	AH VIR	AH VIR	AK VIR	AW VIR	AW VIR	AZ VIR	AZ VIR
MAX	10.3	10.9	8.9	11.4	9.1	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0
MIN	11.0	11.9	12.0	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8
DUR	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3
TOT	(S)					(S)			(S)									(S)			(S)		(S)
0- 1	3.5	6.0		5.0	1.0	5.0	9.5	0.5	4.5	9.5	0.0		5.0	8.0		9.0	11.0			11.0		11.0	
1- 2	4.5	10.0			1.0	5.0		2.0	6.0	4.0	9.0			9.0	13.0			11.0		12.5		12.0	
2- 3	5.0	0.0		11.5	1.0	5.0		3.5	7.5	8.5	1.5		12.0	10.5			11.5						
3- 4	5.5	4.0		5.5	1.0	5.0	11.0	5.0	0.5	3.5	10.5			11.5				12.0			11.5		
4- 5	6.0	8.0			1.0	5.0		6.5	2.0	8.0	3.0	6.0		0.0			12.5				13.0		11.5
5- 6	6.5			12.0	1.0	5.0		8.0	3.5	2.5	12.0	11.0		1.5		12.5							12.5
6- 7	7.0	2.5		6.0	1.0	5.0	12.5	1.0	5.0	7.0	4.5			2.5				8.5	12.5	11.5			
7- 8	7.5	6.5			1.0	5.0		2.5	6.5	2.0			2.5	4.0		11.0	9.0					10.5	
8- 9	0.0	10.5		12.0	1.0	5.0		4.0	8.0	6.0	6.0			5.0				9.5			10.5	12.0	
9-10	0.5	0.5	12.0	6.0	1.0	5.0		5.5	1.0	1.0		3.0	9.5	6.0		9.0	10.0				12.0		
10-11	1.5	4.5	11.5	0.5	1.0	5.0		7.0	3.0	5.5	7.5	8.5		7.5				10.5					
11-12	2.0	8.5	10.5	12.5	1.0	5.0		0.0	4.5	0.0	0.0			8.5			11.0			10.5			11.0
12-13	2.5		10.0	6.5	1.0	5.0		1.5	6.0	4.5	9.0			10.0				11.5	12.0	12.0			12.5
13-14	3.0	3.0	9.5	0.5	1.0	5.0		3.0	7.5	9.0	1.5			11.0			12.0						
14-15	3.5	7.0	8.5	13.0	1.0	5.0		4.5	0.5	4.0	10.5			12.0		12.5		12.0			10.5	10.5	
15-16	4.0	11.0	8.0	7.0	1.0	5.0		6.0	2.0	8.0	3.0	6.0		1.0			12.5				12.0	11.5	
16-17	4.5	1.0	7.5	1.0	1.0	5.0		7.5	3.5	3.0	12.0	11.0	7.0	2.0		10.5						13.0	
17-18	5.5	5.0	6.5		1.0	5.0		0.5	5.0	7.5	4.5			3.0				8.5		11.0			
18-19	6.0	9.5	6.0	7.5	1.0	5.0		2.0	6.5	2.0				4.5	11.5	9.0	9.0			12.5			11.0
19-20	6.5		5.5	1.5	1.0	5.0		4.0	8.0	6.5	6.0			5.5				9.5					12.5
20-21	7.0	3.5	4.5		1.5	5.5		5.5	1.0	1.5		3.0		6.5			10.0				11.0		
21-22	7.5	7.5	4.0	7.5	1.5	5.5		7.0	2.5	5.5	7.5	8.5		8.0				10.5			12.5	10.5	
22-23	0.0	11.5	3.0	1.5	1.5	5.5		8.5	4.0	0.5	0.0			9.0	12.0		11.0					11.5	
23-24	0.5	1.5	2.5		1.5	5.5		1.5	5.5	5.0	9.0		4.5	10.5		12.5		11.5		11.5		13.0	
24-25	1.0	5.5	2.0	8.0	1.5	5.5		3.0	7.0	9.0	1.5			11.5			12.0			13.0			
25-26	1.5	10.0	1.0	2.0	1.5	5.5		4.5	0.0	4.0	10.5		12.0	0.0		10.5		12.5					11.0
26-27	2.5		0.5		1.5	5.5		6.0	1.5	8.5	3.0	6.0		1.5	12.5		12.5				11.5		12.0
27-28	3.0	4.0		8.5	1.5	5.5		7.5	3.0	3.5	12.0	11.5		2.5		9.0							
28-29	3.5	8.0		2.5	1.5	5.5		0.5	4.5	7.5	4.5			3.5				9.0		10.5		10.5	
29-30	4.0				1.5	5.5		2.0	6.5	2.5				5.0			9.0			12.0		11.5	

	BH	Z	AW	AX	AY	BE	BO	BS	BT	BU	CD
	VIR	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	9.9	7.4	10.8	11.0	11.0	9.9	10.4	11.0	11.8	10.6	11.5
MIN	11.3	9.2	11.9	12.5	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	4	6	5	5	4	5	4	3	3	3	4
TOT											
0- 1											
1- 2	11.5										4.5
2- 3							5.5			1.5	
3- 4			2.5							4.5	5.5
4- 5							4.5				
5- 6								4.5	3.0		
6- 7					3.0		3.0	3.5	6.5	1.0	
7- 8			3.0			0.0		2.5		4.0	
8- 9							2.0	1.0			0.5
9-10								0.0			
10-11	11.5					2.5	0.5			0.5	1.5
11-12			4.0	0.0						4.0	
12-13										7.0	3.0
13-14				0.5		5.0			2.5		
14-15									6.0	0.0	4.0
15-16			5.0	1.5				4.5		3.5	
16-17			0.0					3.5		6.5	5.5
17-18				2.0				2.5			
18-19		3.5			4.5			1.0			6.5
19-20	11.0		5.5	2.5						3.0	
20-21			1.0							6.5	
21-22				3.0					2.5		0.0
22-23									5.5		
23-24	13.0	1.5	6.5	3.5	0.5					2.5	1.5
24-25			1.5			2.0		5.5		6.0	
25-26				4.5				4.5			2.5
26-27								3.5			
27-28				5.0		4.5		2.0		2.0	4.0
28-29			2.5					1.0		5.5	
29-30				5.5					2.0		5.0

AAVSO Eclipsing Binary Ephemeris for December 2015 all times in U.T.

	RT AND	TW AND	UU AND	WZ AND	XZ AND	AB AND	AB AND	AD AND	BD AND	BX AND	DS AND	DS AND	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	11.1	11.3	8.6	10.8	10.8	10.7	10.3	9.3	9.2	9.2	10.6	9.0	10.1	10.1	5.7	5.7
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	11.6	11.7	9.5	11.4	11.4	12.0	11.2	11.2	10.1	10.1	12.3	10.4	11.1	11.1	6.4	6.4
DUR	3	11	8	4	3	3	3	4	3	4	4	4	3	3	7	3	3	4	4	3	3	5	5
TOT		2																					
							(S)	(S)				(S)					(S)				(S)		(S)
0- 1	1.5		2.0			6.5	2.5		3.0			6.0	1.0	0.5			3.0	0.5		8.5	3.5		
1- 2	8.0			6.0		6.5	2.5		1.5	3.5		6.0	3.5							4.0	8.5		4.5
2- 3					3.0	6.5	2.5	10.5	10.5	9.0		6.5								9.0	4.0	11.0	
3- 4	5.0		1.5	8.0	11.5	6.0	2.0	10.5	9.0			6.5								4.5	9.5		
4- 5	11.0			1.0		6.0	2.0	10.0	7.0	5.0		7.0								0.0	5.0		
5- 6	2.5	2.0		10.0		6.0	2.0	9.5	5.5	10.0		7.0	1.0	4.5						5.0	0.5		
6- 7	8.5		0.5	3.0	4.5	6.0	2.0	9.5	3.5	0.5		7.5	3.5	1.0	0.0					0.5	5.5		5.5
7- 8						6.0	2.0	9.0	1.5	6.0		7.5								6.0	1.0	12.0	
8- 9	6.0			5.0		5.5	1.5	8.5		11.5		8.0								1.5	6.5		
9-10	12.0	5.0				5.5	1.5	8.5	9.0	2.0		8.0							0.5	6.5	2.0		
10-11	3.0			7.0	6.5	5.5	1.5	8.0	7.5	7.0		8.5	1.0			0.0			3.0	2.0	7.0	0.5	
11-12	9.5					5.5	1.5	7.5	5.5			8.5	4.0			0.5		2.0		7.5	2.5		7.0
12-13	0.5			9.0		5.5	1.5	7.5	4.0	3.0		9.0		2.0		0.5				3.0	7.5		
13-14	6.5	8.0		2.0		5.0	1.0	7.0	2.0	8.5		9.0				1.0				8.0	3.0		
14-15	13.0				8.0	5.0	1.0	6.5	0.5			9.5				1.5				3.5	8.5		
15-16	4.0			4.0		5.0	1.0	6.5	9.5	4.5		9.5	1.0			1.5				9.0	4.0	2.0	
16-17	10.0					5.0	1.0	6.0	8.0	9.5		10.0	4.0			2.0				4.5	9.0		8.0
17-18	1.0			6.0	1.0	5.0	1.0	5.5	6.0	0.5		10.0				2.5				9.5	4.5		
18-19	7.5				10.0	4.5	0.5	5.5	4.5	5.5		10.5		3.0		2.5				5.0	0.0		
19-20				8.0		4.5	0.5	5.0	2.5	11.0		10.5				3.0				0.5	5.5		
20-21	4.5			1.0		4.5	0.5	4.5	1.0	1.5		11.0	1.5						2.0	5.5	1.0	3.0	
21-22	11.0			10.0	3.0	4.5	0.5	4.5	10.0	7.0		11.0	4.0							1.0	6.0		9.5
22-23	2.0		9.0	3.0	11.5	4.0	0.0	4.0	8.5											6.5	1.5		
23-24	8.0					4.0	0.0	3.5	6.5	2.5					3.0					2.0	7.0		
24-25				5.0		4.0	0.0	3.5	4.5	8.0				4.0						7.0	2.5		
25-26	5.5		8.5		4.5	4.0	8.0	3.0	3.0		0.0		1.5	0.5						2.5	7.5	4.0	
26-27	11.5			7.0		4.0	8.0	2.5	1.0	4.0	0.5		4.0							8.0	3.0		10.5
27-28	2.5					3.5	7.5	2.5	10.5	9.0	0.5									3.5	8.5		
28-29	9.0		7.5	9.0		3.5	7.5	2.0	8.5		1.0									8.5	3.5		
29-30				2.0	6.5	3.5	7.5	1.5	7.0	5.0	1.0						0.0			4.0	9.0		
30-31	6.0					3.5	7.5	1.5	5.0	10.5	1.5		1.5	5.0			0.5		1.0	9.5	4.5	5.5	

	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	TU BOO	TU BOO	TY BOO	TY BOO	TZ BOO	TZ BOO	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA	SX CMA
MAX	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	11.7	11.7	11.8	11.8	10.6	10.6	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4	10.3
MIN	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	12.7	12.7	12.3	12.3	11.1	11.1	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9	11.4
DUR	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	10	3	5	5	5	4	5	4
TOT		(S)		(S)				(S)		(S)		(S)		(S)						(S)			
0- 1	5.5	12.5		1.5		12.0		13.0	10.5		11.0		12.5	9.0			11.0	4.0	5.5				
1- 2	9.0	2.0				2.5	6.0		9.5		9.5		10.0				1.5	12.0	0.0	9.0			
2- 3	12.5	5.5	3.0			6.5			9.0	13.0	8.5	12.5	0.0	10.5	9.5		6.0		12.5	3.5		3.0	4.5
3- 4	2.0	9.0			5.0	11.0		9.0	8.5	12.5		11.0	11.5	8.0			10.5		7.0		6.0	10.0	
4- 5	5.5	12.0		4.5	11.0	1.0	2.0		7.5	11.5		10.0	9.0	12.5		4.5	0.5	3.5	1.5	10.5	9.0		
5- 6	8.5	2.0				5.5	12.5			11.0	12.5	9.0		10.0			5.0	11.5		5.0	12.5		10.5
6- 7	12.0	5.0	6.0			10.0		5.5		10.5	11.5	7.5	11.0	0.5			9.5		8.5				
7- 8	1.5	8.5				0.0				9.5	10.5		8.5	12.0	9.0	12.0			3.0	12.0		7.0	
8- 9	5.0	12.0		8.0	4.5	4.5	8.5		13.0	9.0	9.0	13.0	13.0	9.5			4.0	3.5		6.5			
9-10	8.5	1.5			10.5	9.0		1.5	12.5	8.5	8.0	12.0	10.5				8.5	11.0	10.0	0.5			
10-11	11.5	5.0	9.5					12.0	11.5	7.5		10.5	0.5	11.5					4.0				7.5
11-12	1.5	8.0				3.5	5.0		11.0			9.5	12.5	8.5			3.5			7.5	4.5	4.0	
12-13	4.5	11.5		11.0		8.0			10.5		12.0	8.5	9.5		9.0		8.0	3.0	11.0	2.0	8.0	11.0	
13-14	8.0	1.0			4.0	12.0		8.0	9.5		11.0			10.5			12.0	11.0	5.5		11.0		
14-15	11.5	4.5	12.5		10.0	2.5	1.5		9.0	13.0	10.0		11.5	8.0		2.5	2.5			9.0			
15-16	1.0	8.0				6.5	11.5		8.5	12.0	8.5	12.5	9.0	12.5			7.0		12.5	3.5			4.5
16-17	4.5	11.0				11.0		4.5	7.5	11.5		11.5		10.0			11.5	2.5	7.0			8.5	
17-18	7.5	1.0				1.0				11.0		10.0	11.0	0.0	9.0	10.0	1.5	10.5	1.0	10.5			
18-19	11.0	4.0			3.5	5.5	7.5			10.5	12.5	9.0	8.5	12.0			6.0			4.5			10.5
19-20	0.5	7.5			9.5	10.0		1.0		9.5	11.5	8.0	13.0	9.5			10.5		8.0		3.5		
20-21	4.0	11.0				0.0		11.0	13.0	9.0	10.5		10.0				1.0	2.5	2.5	11.5	7.0	5.5	
21-22	7.5	0.5				4.5	4.0		12.0	8.5	9.0		0.5	11.0			5.5	10.0		6.0	10.0		
22-23	10.5	4.0				9.0			11.5	7.5	8.0	12.0	12.0	8.5	8.5		10.0		9.5	0.5			
23-24	0.5	7.0			3.0			7.0	11.0			10.5	9.5						4.0				7.5
24-25	3.5	10.5			9.0	3.5	0.5		10.5			9.5		10.5		0.5	4.5	2.0		7.5		2.5	
25-26	7.0	0.0				8.0	10.5		9.5		12.0	8.5	11.5	8.0			9.0	10.0	11.0	2.0		9.5	
26-27	10.5	3.5				12.0		3.5	9.0	13.0	11.0		9.0	12.5					5.5				
27-28		7.0				2.5			8.5	12.0	10.0			10.0	8.5	8.0	3.5			9.0			
28-29	3.5	10.0			2.5	6.5	6.5		7.5	11.5	8.5	12.5	11.0	0.0			8.0	1.5	12.5	3.0	5.5		4.5
29-30	6.5			0.0	8.5	11.0				11.0		11.5	8.0	11.5			12.5	9.5	6.5		9.0	7.0	
30-31	10.0	3.0				1.5		10.0		10.5		10.0	12.5	9.0			3.0		1.0	10.0	12.0		

	TU CMA	TZ CMA	TZ CMA	UU CMA	XZ CMI	AK CMI	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP
MAX	9.7	9.8	9.8	10.0	9.7	10.1	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	11.2	11.2	10.1	6.7	8.8
MIN	10.7	10.5	10.5	12.5	10.2	11.5	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	11.7	11.7	10.9	9.8	9.8
DUR	4	4	4	5	3	4	4	4	4	4	3	3	4	4	5	5	4	3	4	4	5	4	4
TOT			(S)									(S)								(S)		2	
0- 1		12.0			12.0	5.5			4.0	10.0	0.0	4.0	3.0	0.5			2.5				3.5		12.0
1- 2				10.0		9.0					7.0	3.0		9.0			8.5		10.5			1.5	10.0
2- 3			11.0		6.0	12.0					6.0	2.0	11.5	1.5						5.0			7.5
3- 4					9.5					3.5	5.0	1.0	6.0	10.0				11.5			2.0		5.0
4- 5		7.5				5.0		4.0		12.5	3.5	7.5	1.0	2.5		1.5							2.5
5- 6	5.5				3.0	8.0	2.5	8.5			2.5	6.5		11.0		5.0	2.0	5.5		7.0			0.5
6- 7	8.5		6.5		7.0	11.0					1.5	5.5	9.5	3.5	11.0	9.0	8.0		1.5		1.0	1.0	
7- 8	11.5				11.0				10.0	6.0	0.5	4.5	4.5	12.0		12.5					12.0		
8- 9		3.5				4.0					7.0	3.5		4.5	7.5					9.0		13.0	
9-10					4.5	7.0			5.5		6.0	2.5	13.0						3.5				12.5
10-11					8.5	10.0		3.5			5.0	1.5	7.5	5.5	3.5		1.5	11.5			11.0		10.0
11-12					12.0			8.0	1.0	8.5	4.0	0.0	2.5			0.0	7.5			11.0		1.0	7.5
12-13				6.0		3.0		12.5			3.0	7.0		6.5		4.0		5.5	5.5				5.5
13-14	3.0				5.5	6.0					2.0	6.0	11.0			7.5				0.0	9.5	12.5	3.0
14-15	6.0			10.0	9.5	9.5				2.0	1.0	5.0	6.0	7.5		11.5							0.5
15-16	9.0					12.5	1.5			10.5	7.5	3.5	0.5				1.0		8.0				
16-17					3.0			2.5	11.5		6.5	2.5		8.5			7.0			2.5	8.5	0.5	
17-18					7.0	5.0		7.5			5.5	1.5	9.0	1.0	12.5		13.0	11.5					
18-19					10.5	8.5		12.0	7.0	4.5	4.5	0.5	4.0	9.5					10.0			12.5	13.0
19-20						11.5					3.5	7.0		2.0	8.5	2.5		5.5		4.5	7.0		10.5
20-21					4.5				2.5		2.5	6.0	12.5	10.5		6.5	1.0						8.0
21-22					8.0	4.5					1.5	5.0	7.5	3.0	4.5	10.5	6.5		12.0			0.0	5.5
22-23	3.5				12.0	7.5		2.0		7.0	0.5	4.0	2.0	11.5			12.5			6.5	6.0		3.5
23-24	6.5	10.5				10.5		7.0			7.0	3.0		4.0	1.0				1.0			12.0	1.0
24-25	9.5				5.5			11.5			6.0	2.0	11.0	12.5				11.5					
25-26			9.5	6.0	9.5	3.5	0.5		13.0	0.5	5.0	1.0	5.5	5.0			0.5			8.5	4.5		
26-27						6.5				9.0	4.0	7.5	0.5			1.5	6.0	5.5	3.0				
27-28		6.0		10.0	3.0	9.5			8.5		2.5	6.5		6.0		5.5	12.0						
28-29					7.0	13.0		1.5			1.5	5.5	9.0			9.0				10.5	3.5	11.5	11.0
29-30			5.0		10.5	2.5		6.5	4.0	3.0	0.5	4.5	4.0	7.0		13.0			5.0				8.5
30-31						5.5		11.0		11.5	7.0	3.5			9.5								6.0

	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	RV CRV	V CRT	Y CYG
MAX	11.4	11.4	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	9.0	9.0	9.5	7.0
MIN	12.0	12.0	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	10.0	10.0	10.2	7.6
DUR	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6
TOT		(S)							(S)		(S)		(S)		(S)				(S)		(S)		
0- 1	5.0	0.0		8.0			12.0	10.5	7.5	10.5	6.5	12.0	7.0	11.0	8.0			8.5					
1- 2	1.0	6.0	0.5	8.0	6.0		1.0	9.0	6.0	11.0	7.0	8.0	13.0	8.0	10.5		11.0	12.5	7.5	12.0		8.0	4.5
2- 3	7.0	2.0		7.5			3.5	8.0	10.5	11.0	7.0		8.5	10.5	8.0				11.5				
3- 4	3.0	8.0	9.0	7.0		1.5	5.5	6.5	9.5	11.5	7.5	9.5		7.5	10.5			11.0				10.5	
4- 5	9.5	4.0		7.0	12.0	5.5	7.5	11.0	8.5	12.0	8.0		10.5	10.0	7.5				10.5	11.5			4.5
5- 6	5.5	0.5		6.5		9.0	9.5	10.0	7.0	12.5	8.5	11.0		7.5	10.0			9.5				13.0	
6- 7	1.5	6.5		6.0	3.5		12.0	8.5	6.0	12.5	8.5	7.0	12.0	10.0	7.0		13.0		9.0				
7- 8	7.5	2.5		6.0			1.0	7.5	10.5		9.0	12.5	7.5	7.0	9.5			8.0	13.0	11.0			4.5
8- 9	3.5	8.5	1.0	5.5			3.0	6.5	9.0		9.5	8.5		9.5	7.0			12.0				8.5	
9-10	9.5	4.5		5.0	9.5		5.0	11.0	8.0		9.5		9.0	6.5	9.5		10.5		11.5				
10-11	5.5	0.5	9.0	5.0		0.5	7.5	9.5	6.5		10.0	10.0		9.0	6.5			10.5		11.0		11.0	4.0
11-12	1.5	6.5		4.5	0.5	4.5	9.5	8.5	11.0	6.5	10.5		10.5	6.5	9.0				10.0				
12-13	7.5	2.5		4.0		8.5	11.5	7.0	10.0	7.0	11.0	11.5		9.0	6.0			9.0					
13-14	3.5	8.5		4.0		12.5	0.5	6.0	9.0	7.0	11.0	7.5	12.0	6.0	8.5				8.5	10.5			4.0
14-15	9.5	4.5		3.5	7.0		3.0	10.5	7.5	7.5	11.5		8.0	8.5	6.0		12.5	8.0	12.5				
15-16	5.5	0.5	1.5	3.0			5.0	9.0	6.5	8.0	12.0	9.0		11.0	8.5			11.5				9.0	
16-17	2.0	7.0		3.0			7.0	8.0	11.0	8.5	12.5		9.5	8.0	11.0				11.0	10.5			4.0
17-18	8.0	3.0	9.5	2.5		0.0	9.5	7.0	9.5	8.5	12.5	10.5		10.5	8.0		10.5	10.5			13.0	11.5	
18-19	4.0	9.0		2.0		4.0	11.5	11.0	8.5	9.0			11.0	8.0	10.5				9.5				
19-20	10.0	5.0		2.0	4.5	8.0	0.5	10.0	7.0	9.5		12.0	7.0	10.5	7.5			9.0		10.0			4.0
20-21	6.0	1.0		1.5		11.5	2.5	9.0	6.0	10.0		7.5	12.5	7.5	10.0			13.0	8.0		12.5		
21-22	2.0	7.0		1.0			5.0	7.5	10.5	10.0			8.5	10.0	7.5				12.0				
22-23	8.0	3.0	1.5	1.0	10.5		7.0	6.5	9.0	10.5	6.5	9.5		7.0	10.0		12.5	11.5		10.0		9.5	4.0
23-24	4.0	9.0		0.5			9.0	11.0	8.0	11.0	7.0		10.0	9.5	7.0				10.5		12.5		
24-25	0.0	5.0	9.5	0.0	2.0		11.0	9.5	7.0	11.5	7.0	11.0		7.0	9.5			10.0				12.0	
25-26	6.0	1.0				3.5	0.0	8.5	11.5	11.5	7.5	6.5	11.5	9.5	6.5		10.0		9.0	9.5			3.5
26-27	2.0	7.0				7.0	2.5	7.0	10.0	12.0	8.0	12.5	7.5	6.5	9.0	11.0		8.5			12.0		
27-28	8.5	3.5			8.0	11.0	4.5	6.0	9.0	12.5	8.5	8.0		9.0	6.5			12.5	8.0			7.0	
28-29	4.5	9.5					6.5	10.5	7.5	13.0	8.5		9.0	6.0	9.0				11.5	9.5			3.5
29-30	0.5	5.5	2.0				9.0	9.5	6.5		9.0	9.5		8.5	6.0			11.0			12.0	9.5	
30-31	6.5	1.5					11.0	8.0	11.0		9.5		10.5	6.0	8.5		12.0		10.5				

	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA
MAX	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0
MIN	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9
DUR	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	7	5	4	4	3	4	3
TOT	2																2						
														(S)									
0- 1			3.0													3.5	2.5				0.0	7.5	8.0
1- 2							5.5	5.0		6.0		4.5	1.5			7.0							10.0
2- 3			0.5		4.0	5.0	4.0					2.0											12.5
3- 4			6.5		12.0		2.5			4.0				3.5	1.0						3.5	0.5	2.0
4- 5		4.0	12.5			2.5	1.0	1.5	2.5					13.0		3.5						9.0	4.5
5- 6			4.0							2.0	3.5					6.5			3.0				7.0
6- 7					4.0							13.0								4.0			9.0
7- 8			1.0		12.0	6.0				0.5											1.5	2.0	11.5
8- 9													0.5			3.0		4.0				11.0	1.0
9-10						3.5	5.5					5.0				6.5							3.5
10-11			4.5		4.0		4.0			5.0		2.5		2.5	2.0					3.0			6.0
11-12					12.0	1.0	2.5				3.5							0.5	1.5			4.0	8.0
12-13			1.5				1.0			3.5	0.5		4.5			3.0						12.5	10.5
13-14																6.5							
14-15		3.0		6.0	4.0	4.5				1.5										2.5	2.5		2.5
15-16			5.0	5.0	12.0				2.0													5.5	5.0
16-17				4.5		2.0										3.0							7.0
17-18			2.5	3.5			5.5			6.5	4.0	5.5		1.5	3.0	6.5			0.5				9.5
18-19				3.0	4.0		4.0				0.5	3.0								1.5	0.5		12.0
19-20				2.0	12.0	6.0	2.5			4.5		0.5	3.5									7.5	1.5
20-21			6.0	1.5			1.0									3.0							3.5
21-22			12.0	0.5		3.0		2.0		2.5						6.0					3.5		6.0
22-23	0.5		3.0		3.5															0.5		0.5	8.5
23-24					11.5	0.5				0.5	4.5											9.0	11.0
24-25		2.0	0.5								1.0			0.5	4.0	2.5	3.0		4.0				0.5
25-26			6.5				5.5									6.0					1.5		2.5
26-27			12.5		3.5	4.5	4.0		1.5	5.5		3.5	2.5									2.5	5.0
27-28			4.0		11.5		2.5					1.0				13.0						11.0	7.5
28-29						2.0	1.5			3.5				4.5		2.5							10.0
29-30			1.0								4.5					6.0				4.0			12.5
30-31					3.5					2.0	1.0								3.0			4.0	1.5

	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA	DK HYA	SW LAC	SW LAC	VX LAC	CM LAC
MAX	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0	11.0	10.5	9.2	9.2	10.9	8.5
MIN	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12.0	11.0	10.0	10.0	12.3	9.5
DUR	5	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4
TOT	1				1			1			1												
			(S)				(S)										(S)				(S)		
0- 1					6.5	0.0	4.0								10.0	5.0	9.0		7.5	6.5	2.5		
1- 2				1.0		7.0	3.0						10.5			5.0	9.0	6.0	8.5	5.5	2.0		
2- 3			9.0	6.0		6.0	2.0								11.5	4.5	8.5	11.5	9.5	4.5	1.0	0.0	7.0
3- 4				10.5		5.0	1.5		5.0							4.5	8.5		10.5	4.0	7.5	2.0	
4- 5		0.0				4.5	0.5		11.0	0.5					12.5	4.5	8.5	8.0	11.5	3.0	6.5	4.0	
5- 6						3.5	7.5								5.0	4.0	8.0		13.0	2.0	6.0	5.5	
6- 7						2.5	6.5			11.0	11.5					4.0	8.0			1.0	5.0	7.5	
7- 8	11.0	6.5		1.0		2.0	5.5								6.0	3.5	7.5	9.5		0.0	4.0		3.0
8- 9				6.0	2.0	1.0	5.0		4.5	2.5				10.5		3.5	7.5			7.0	3.0		
9-10				10.5		0.0	4.0		10.5			0.5			7.5	11.5	7.5	6.0		6.0	2.0		
10-11	6.0	13.0				7.0	3.0	11.5								11.0	7.0	11.5		5.0	1.5		8.0
11-12						6.0	2.5				0.5				8.5	11.0	7.0		6.5	4.0	0.5		
12-13			4.0			5.5	1.5									10.5	6.5	7.5	7.5	3.5	7.0		
13-14	1.5			1.0	7.5	4.5	0.5	8.5	4.0	0.5					9.5	10.5	6.5		8.5	2.5	6.5		
14-15				5.5		3.5	7.5		10.0							10.5	6.5		9.5	1.5	5.5		
15-16			10.0	10.5		2.5	6.5			11.0					11.0	10.0	6.0	9.5	11.0	0.5	4.5		3.5
16-17						2.0	5.5	5.0								10.0	6.0		12.0	7.5	3.5		
17-18		1.5				1.0	5.0			2.5					12.0	9.5	6.0	5.5	13.0	6.5	2.5	1.5	
18-19						0.0	4.0		3.5						4.5	9.5	5.5	11.0		5.5	1.5	3.0	
19-20				1.0		7.0	3.0	2.0	9.0							9.5	5.5			4.5	1.0	5.0	
20-21		7.5		5.5		6.0	2.5						12.5		5.5	9.0	5.0	7.5		4.0	7.5	6.5	
21-22	11.5			10.5	3.0	5.5	1.5									9.0	5.0	13.0		3.0	6.5		
22-23						4.5	0.5			0.5					7.0	8.5	5.0			2.0	6.0		
23-24						3.5	7.5		2.5							8.5	4.5	9.0	6.5	1.0	5.0		4.0
24-25	7.0					3.0	6.5		8.5	11.0		12.5		12.5	8.0	8.5	4.5		7.5	0.0	4.0		
25-26			5.0	0.5		2.0	6.0									8.0	4.0	5.5	9.0	7.0	3.0		
26-27				5.5	8.0	1.0	5.0			2.5		1.5			9.5	8.0	4.0	11.0	10.0	6.0	2.0		
27-28	2.5			10.0		0.0	4.0						11.0			7.5	4.0		11.0	5.0	1.0		
28-29			11.5			7.0	3.0		2.0						10.5	7.5	3.5	7.0	12.0	4.0	0.5		
29-30						6.0	2.5		8.0							7.5	3.5	12.5		3.5	7.0		
30-31		2.5				5.5	1.5	13.0							12.0	7.0	11.0			2.5	6.0		

	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	T LMI	Z LEP	RR LEP	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON	BO MON	SX OPH	V508 OPH
MAX	10.5	10.5	9.5	11.4	9.5	10.6	10.2	11.0	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	10.8	10.5	10.1
MIN	11.0	11.0	12.7	12.7	10.2	11.7	12.6	12.5	10.9	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3	12.1	11.2	10.7
DUR	5	5	5	4	3	4	6	4	4	6	7	4	5	5	4	5	5	5	5	4	5	5	3
TOT																		1					
		(S)															(S)						
0- 1					8.0	11.0		7.5				8.0		11.5				9.0					
1- 2	7.5		8.0		13.0		12.5	7.0												10.0			
2- 3		2.0						7.0			12.0		12.5					6.5		4.0			1.0
3- 4				6.5	8.0			7.0				5.0			12.0								
4- 5	9.5				13.0			6.5								8.0		4.5		8.5	6.5		
5- 6		4.0						6.5															
6- 7			9.5		8.0			6.5	10.5			2.0						2.0			12.0		12.5
7- 8	12.0				13.0			6.0	8.5			12.5								7.0			
8- 9		6.0		7.5				6.0	6.5														
9-10	1.0				8.0	4.5		6.0	4.5		11.5						4.0			11.5			
10-11					13.0	6.5		6.0	2.5			9.0	2.0		1.0					5.0			
11-12		8.0	11.0			9.0		5.5								12.0							
12-13	3.0				8.0	11.0		5.5							5.0					10.0			0.5
13-14			3.5	8.5	13.0			5.5				6.0								3.5	4.0	12.5	
14-15		10.0						5.0						3.0									
15-16	5.0				8.0			5.0												8.5	9.5		
16-17			12.5		13.0			5.0			11.0	3.0		2.0			8.0						12.5
17-18		12.0						4.5	10.0	12.0								12.5					
18-19	7.0		4.5	9.5	8.0			4.5	8.0					0.5						6.5			
19-20		1.0			13.0			4.5	6.0									10.5					
20-21								4.5	4.0			10.0								11.5			
21-22	9.0				8.0	4.0		4.0	2.0									8.0		5.0			
22-23		3.0			13.0	6.5		4.0								6.0			3.0				0.5
23-24			6.0	10.5		8.5		4.0			11.0	7.0			2.5		12.0	6.0		9.5			1.5
24-25	11.0				8.0	10.5		3.5											3.5	3.5	7.0		
25-26		5.0				13.0		3.5										3.5					
26-27								3.5				4.0							4.5	8.0	12.5		12.5
27-28	13.0				8.0			3.0					2.5		11.0		2.0	1.5					
28-29		7.5	7.5	11.5				3.0	9.5										5.0	13.0			
29-30	2.0							3.0	7.5			1.0	0.0			10.0				6.5			
30-31					8.0			2.5	5.5		10.5	11.5							6.0				

	V839 OPH	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI	GU ORI	GU ORI	U PEG	U PEG	TY PEG	AQ PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	Z PER	RT PER	RV PER
MAX	8.8	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	9.9	10.6	10.3
MIN	9.4	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	10.5	10.5	12.6	13.0	11.2	11.2	11.5	10.8	11.0	12.4	12.0	12.7
DUR	3	4	3	3	5	3	4	3	3	4	4	3	3	6	12	3	3	3	2	4	6	4	8
TOT															5						2		
				(S)					(S)		(S)		(S)				(S)						
0- 1			10.0	5.0	3.5			1.5	6.5	8.0	2.5	2.5	6.5			0.5	5.0	3.5					
1- 2	13.0	10.0	6.5	1.5	2.5			6.5	1.5	6.5	1.0	5.0	0.5			2.5			2.0		0.0	11.5	
2- 3			2.5	8.0	1.5	6.5		1.5	6.5	5.0	11.0		3.5	3.5		4.5	0.0	3.0				8.0	
3- 4		4.0	9.0	4.0	0.0			6.5	1.5	4.0	9.5	2.0	6.5				2.0	6.0	5.5			4.0	
4- 5			5.5	10.5				1.5	6.5	2.5	8.0	5.0	0.5				4.0	2.0			1.5	0.5	
5- 6			2.0	7.0		9.0		6.5	1.5	1.0	6.5		3.5	5.5		2.0		5.0					
6- 7	1.0		8.5	3.5				1.5	6.5	11.0	5.0	2.0	6.5			4.0		1.0	2.0				
7- 8			4.5	9.5				6.5	1.5	9.5	4.0	5.0	0.5			6.0	1.5	4.0			3.0	10.0	
8- 9		9.5	1.0	6.0		11.5		1.5	6.5	8.0	2.5		3.5				3.5	0.0	5.0			6.5	
9-10			7.5	2.5				6.5	1.5	6.5	1.0	2.0	6.5			1.5	5.5	3.0				3.0	
10-11	13.0	3.5	4.0	9.0		1.0		1.5	6.5	5.5	11.0	5.0	0.5			3.5		6.0			4.0		
11-12			10.5	5.0			1.5	6.5	1.5	4.0	9.5		3.5			5.5	1.0	2.0	1.5				
12-13			6.5	1.5				1.5	6.5	2.5	8.0	2.0	6.5				3.0	5.0				12.5	
13-14			3.0	8.0	11.0	3.0		6.5	1.5	1.0	6.5	5.0	0.5			1.0	5.0	1.5	4.5		5.5	9.0	
14-15			9.5	4.5	10.0		5.0	1.5	6.5	11.0	5.5		3.5			3.0		4.0				5.0	
15-16	1.0	9.5	5.5	0.5	9.0			6.5	1.5	9.5	4.0	2.0	6.5			5.0	0.5	0.5				1.5	
16-17			2.0	7.0	7.5	5.5		1.5	6.5	8.0	2.5	5.0	0.5				2.5	3.5	1.0		7.0		
17-18		3.0	8.5	3.5	6.5		8.5	6.5	1.5	6.5	1.0		3.5			0.0	4.5						12.5
18-19			5.0	10.0	5.5			1.5	6.5	5.5	11.0	2.0	6.5			2.5		2.5	4.0			11.0	
19-20	13.0		1.0	6.5	4.0	8.0		6.5	1.5	4.0	9.5	5.0	0.5			4.5		5.5			8.5	7.5	12.0
20-21			7.5	2.5	3.0		12.5	1.5	6.5	2.5	8.0		3.5				2.0	1.5				4.0	
21-22			4.0	9.0	1.5			6.5	1.5	1.0	6.5	2.0	6.5				4.0	4.5	0.5			0.5	11.5
22-23		9.0	10.5	5.5	0.5	10.5		1.5	6.5	11.0	5.5	5.0	0.5			1.5	6.0	0.5			9.5		
23-24			7.0	1.5				6.5	1.5	9.5	4.0		3.5		0.5	3.5		3.5	4.0				11.0
24-25	0.5	3.0	3.0	8.0				1.5	6.5	8.0	2.5	2.0	6.5			6.0	1.5					10.0	
25-26			9.5	4.5				6.5	1.5	6.5	1.0	5.0	0.5				3.5	2.5	7.0	7.0	11.0	6.0	10.0
26-27			6.0	1.0				1.5	6.5	5.5	11.0		3.5			1.0	5.5	5.5	0.0	6.5		2.5	
27-28			2.5	7.5		2.0		6.5	1.5	4.0	9.5	2.0	6.5			3.0		2.0		6.0			9.5
28-29	12.5		8.5	3.5				1.5	6.5	2.5	8.0	5.0	0.5			5.0	1.0	4.5	3.5	5.5	12.5		
29-30		8.5	5.0	10.0				6.5	1.5	1.0	7.0		3.5				3.0	1.0		5.0		12.0	9.0
30-31			1.5	6.5		4.5		1.5	6.5	11.0	5.5	2.0	6.5			0.5	5.0	4.0	6.5	4.5		8.5	

	ST PER	XZ PER	BETA PER	Y PSC	UZ PUP	UZ PUP	U SGE	V505 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA
MAX	9.7	10.6	2.2	9.0	9.7	9.7	6.4	6.4	10.6	11.1	11.1	8.0	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9	11.4	9.1
MIN	13.2	12.7	3.5	12.0	10.6	10.3	9.1	7.6	12.1	11.7	11.7	12.5	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0	12.5	9.9
DUR	5	4	8	7	4	4	6	5	4	4	4	4	3	2	4	6	5	3	3	4	4	4	3
TOT	1						2					1											
						(S)					(S)								(S)				
0- 1						10.5					10.0		2.5		10.0			0.5	4.5	2.0		8.5	1.5
1- 2						5.5					10.5		8.5		2.5			1.0	5.0	6.5		3.0	1.5
2- 3					10.0			1.0			11.5		4.0		12.0		0.5	1.5	6.0				1.5
3- 4					5.0						12.0		0.0	1.5	4.5			2.5	6.5	0.5		9.0	1.5
4- 5		1.5				10.0					13.0		6.0	3.5			2.0	3.0	7.0	4.5		3.0	1.5
5- 6	5.5	5.0				5.0						9.0	2.0	5.0	6.5			3.5	7.5	8.5			1.5
6- 7		8.5			9.5								8.0	7.0		1.0	3.0	4.0	8.0			9.5	1.5
7- 8		12.5			4.5				10.5				4.0	9.0	8.5			4.5	0.5	2.5		3.5	1.5
8- 9				2.0		9.0				10.0		3.5	10.0	11.0	1.0	2.0	4.0	5.0	1.0	7.0			1.5
9-10						4.0	1.0			10.5			6.0		10.0			5.5	1.5			10.0	1.5
10-11					9.0					11.5			2.0		3.0	3.0	5.0	6.5	2.0	1.0		4.0	1.5
11-12			10.5		4.0					12.0			7.5		12.0			7.0	3.0	5.0			1.5
12-13		3.0				8.5				13.0			3.5		4.5	4.0	6.0	7.5	3.5	9.0		10.0	1.5
13-14	4.0	6.5				3.5							9.5					8.0	4.0			4.0	2.0
14-15		10.0	7.0		8.0				11.5				5.5		6.5	5.0	7.0	0.5	4.5	3.0			2.0
15-16					3.5	13.0		1.0					1.5					1.0	5.0	7.5		10.5	2.0
16-17						8.0					10.0	11.0	7.5		8.5	6.0	8.0	1.5	5.5		10.0	4.5	2.0
17-18			4.0		12.5						10.5		3.5	1.5	1.0			2.0	6.0	1.5	9.5		2.0
18-19	11.0				7.5						11.5		9.5	3.5	10.5	7.0	9.0	2.5	7.0	5.5	9.0	11.0	2.0
19-20		0.5				12.0					12.0	5.5	5.0	5.5	3.0			3.5	7.5	9.5	8.0	5.0	2.0
20-21		4.5	1.0			7.5					13.0		1.0	7.0	12.0	8.0	10.0	4.0	8.0		7.5		2.0
21-22	3.0	8.0			12.0				12.0				7.0	9.0	5.0			4.5	0.5	4.0	6.5	11.0	2.0
22-23		11.5			7.0								3.0	11.0		9.0	11.5	5.0	1.0	8.0	6.0	5.5	2.0
23-24				3.5		11.5							9.0		6.5			5.5	1.5		5.5		2.0
24-25						6.5				9.5			5.0			10.0	12.5	6.0	2.0	2.0	4.5		2.0
25-26					11.5					10.5			1.0		8.5			7.0	2.5	6.0	4.0	5.5	2.0
26-27	10.0				6.5					11.5			7.0		1.0	11.5		7.5	3.0		3.5		2.0
27-28		2.0				11.0				12.0			3.0		10.5			8.0	4.0	0.0	2.5		2.0
28-29		6.0				6.0		1.5		13.0			8.5		3.0			0.5	4.5	4.5	2.0	6.0	2.0
29-30	1.5	9.5			10.5				10.0				4.5		12.5			1.0	5.0	8.5	1.0	0.0	2.0
30-31					6.0							7.5	0.5		5.0			1.5	5.5		0.5		2.0

	W	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	AG	AH	AH	AK	AW	AW	AZ	AZ	BH	Z	AW	AY	BE
	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VUL	VUL	VUL	VUL
MAX	9.1	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	11.0	11.0	9.9	7.4	10.8	11.0	9.9
MIN	9.9	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	11.8	11.8	11.3	9.2	11.9	12.9	11.4
DUR	3	6	3	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5	4	5
TOT																							
	(S)			(S)									(S)			(S)		(S)					
0- 1	5.5		3.5	8.0	7.0	6.0		2.5	6.0	13.0			9.5			9.0	12.5	8.5					
1- 2	5.5		5.0	1.0	1.5		3.5		7.5	10.0		10.0				10.5		9.5					
2- 3	5.5		6.5	2.5	6.0	7.5	8.5	9.5	8.5		12.5		10.5			12.0		11.0	12.5		3.0		
3- 4	5.5		8.0	4.0	1.0	0.0			9.5			11.0			9.0			12.0					
4- 5	5.5	2.0	1.0	5.5	5.0	9.0			11.0		10.5	6.5	11.5		10.5		9.0						
5- 6	5.5		2.5	7.0	0.0	1.5			12.0	10.5		12.0	7.0		12.0		10.0					2.0	
6- 7	5.5		4.0	8.5	4.5	10.5	0.5		0.5		9.0	7.5	12.5			9.5	11.5				4.0		
7- 8	5.5	3.5	5.5	1.5	8.5	3.0	6.0		2.0			13.0	8.0			11.0	12.5		10.5				
8- 9	5.5		7.5	3.0	3.5	12.0	11.5		3.0		7.0	8.5			8.0	12.5		9.5					1.0
9-10	5.5		0.5	4.5	8.0	4.5		7.0	4.5	11.0			9.0		9.5			10.5					
10-11	5.5	5.0	2.0	6.0	3.0				5.5			9.5			11.0			12.0					
11-12	5.5		3.5	7.5	7.0	6.0			6.5		12.5		9.5		12.5	8.5	9.0	13.0	12.5		0.0		3.5
12-13	5.5		5.0	0.5	2.0		3.5		8.0			10.0				10.0	10.0						
13-14	6.0	6.5	6.5	2.0	6.5	7.5	8.5		9.0	11.5	10.5		10.5	13.0		11.5	11.0						
14-15	6.0		8.0	3.5	1.0				10.5			11.0			8.5	13.0	12.5						
15-16	6.0		1.0	5.0	5.5	9.0			11.5		9.0	6.5	11.5		10.0			9.5			1.0		
16-17	6.0	8.0	2.5	6.5	0.5	1.5		4.5	0.0			12.0	7.0		11.5			10.5	10.0				
17-18	6.0		4.0	8.0	4.5	10.5	0.5		1.0	11.5	7.0	7.5	12.5			9.0		11.5				3.5	
18-19	6.0		5.5	1.5	9.0	3.0	6.0	11.5	2.5			13.0	8.0			10.5	8.5	13.0					
19-20	6.0	9.5	7.0	3.0	4.0	12.0	11.5		3.5			8.5		12.0		12.0	10.0				1.5		
20-21	6.0		0.0	4.5	8.5	4.5			5.0		12.0		9.0		9.0		11.0		12.0	1.5			
21-22	6.0		1.5	6.0	3.0				6.0	12.0		9.5			10.5		12.0						
22-23	6.0	11.0	3.0	7.5	7.5	6.0			7.0		10.5		10.0		12.0			9.0					0.5
23-24	6.0		4.5	0.5	2.5		3.5	2.0	8.5			10.5				9.5		10.5			2.5		
24-25	6.0		6.0	2.0	6.5	7.5	8.5		9.5		8.5		10.5			11.0		11.5					
25-26	6.0	12.5	7.5	3.5	1.5			9.5	11.0	12.5		11.0		11.0		12.0	8.5	12.5	9.5				3.0
26-27	6.0		0.5	5.0	6.0	9.0			12.0	10.0	7.0	6.5	11.5		9.5		9.5						
27-28	6.0		2.5	6.5	0.5	1.5			0.5			12.0	7.0		11.0		11.0				3.0		
28-29	6.0		4.0	8.0	5.0	10.5	0.5		2.0			7.5	12.5		12.5	8.0	12.0						
29-30	6.0		5.5	1.0	9.5	3.0	6.0		3.0	12.5	12.0	13.0	8.0			9.5		9.0	11.5				
30-31	6.0		7.0	2.5	4.5	12.0	11.5		4.0	10.0		8.5				11.0		10.0					

	BO VUL	BS VUL	BT VUL	BU VUL	CD VUL
MAX	10.4	11.0	11.8	10.6	11.5
MIN	13.3	11.5	12.5	11.4	12.6
DUR	4	3	3	3	4
TOT					
0- 1					
1- 2				2.0	
2- 3				5.0	
3- 4					
4- 5					
5- 6				1.5	
6- 7		3.0		4.5	1.0
7- 8		2.0	2.0		
8- 9		1.0			2.5
9-10				1.0	
10-11				4.5	3.5
11-12	3.5				
12-13					
13-14	2.5			0.5	
14-15				4.0	
15-16	1.0		1.5		
16-17		3.0			
17-18		2.0		0.0	
18-19		1.0		3.5	
19-20					1.0
20-21					
21-22					2.0
22-23				3.0	
23-24			1.0		3.5
24-25			4.5		
25-26					4.5
26-27		3.0		2.5	
27-28		2.0			
28-29		0.5			
29-30					
30-31				2.0	