The 2020 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 2020 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	OO AQL	V343 AQL	SS ARI	SS ARI	WW AUR	WW AUR	AP AUR	AP 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	9.2	10.6	10.1	10.1	5.7	5.7	10.9	10.9
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	10.1	12.3	11.1	11.1	6.4	6.4	11.4	11.4
DUR	3	11	8	4	3	3	3	4	4	3	4	4	4	3	3	3	4	3	3	5	5	4	4
TOT		2																					
							(S)		(S)				(S)			(S)			(S)		(S)		(S)
0- 1				1.5		3.0		2.0		1.5	5.5	6.5							2.5	5.0		1.5	8.0
1- 2	3.5					2.5		1.5				7.0						3.0			11.5	4.5	11.5
2- 3				3.5		2.5		1.5			1.5	7.0							3.0			8.0	1.0
3- 4	1.0				3.5	2.5		1.0			7.0	7.5		2.0				3.5				11.5	4.5
4- 5				5.5		2.5		0.5		5.5		7.5			0.5				4.0			1.0	8.0
5- 6						2.5		0.5		3.5	3.0	8.0						4.0		6.5		4.5	11.0
6- 7	4.0					2.0		0.0		2.0	8.0								4.5			7.5	1.0
7- 8				0.5	5.5	2.0				0.0								5.0	0.0			11.0	4.0
8- 9	1.5					2.0					4.0			2.0				0.5	5.5			0.5	7.5
9-10				2.5		2.0											12.5	5.5	1.0		1.0	4.0	11.0
10-11						1.5				6.0					1.5			1.0	6.0	7.5		7.5	0.5
11-12	5.0			4.5	7.0	1.5				4.0	5.5							6.5	1.5			10.5	4.0
12-13			6.0			1.5				2.5								2.0	6.5			0.5	7.0
13-14	2.5			6.5		1.5				0.5	1.0			2.5				7.0	2.0			3.5	10.5
14-15					0.0	1.5					6.5							2.5			2.5	7.0	0.0
15-16			5.5			1.0													3.0	8.5		10.5	3.5
16-17	6.0			1.5		1.0	5.0			6.5	2.5				2.5			3.5					7.0
17-18						1.0	5.0			4.5	7.5								3.5			3.5	10.0
18-19	3.0		5.0	3.5	2.0	1.0	5.0			2.5				2.5				4.0				6.5	
19-20						1.0	5.0			1.0	3.5								4.5		3.5	10.0	3.0
20-21	0.5			5.5		0.5	4.5											4.5		10.0			6.5
21-22	6.5		4.0			0.5	4.5											0.0	5.0			3.0	10.0
22-23					3.5	0.5	4.5		6.5		5.0		0.0					5.5	0.5			6.5	
23-24	4.0			0.5		0.5	4.5		6.5	5.0			0.5	2.5				1.0	6.0			9.5	3.0
24-25			3.5			0.5	4.5		6.0	3.0	0.5		0.5					6.0	1.5		5.0	13.0	6.0
25-26	1.0			2.5		0.0	4.0		5.5	1.5	6.0		1.0					1.5	6.5	11.0		2.5	9.5
26-27		3.0			5.5	0.0	4.0		5.5				1.0					7.0	2.0			6.0	13.0
27-28			3.0	4.5			4.0		5.0		2.0		1.5					2.5	7.0			9.5	2.5
28-29	4.5						4.0		4.5		7.0		1.5						2.5			12.5	6.0
29-30				6.5			4.0		4.5	5.5			2.0		1.0	0.0		3.0			6.0	2.5	9.0
30-31	2.0		2.0		7.0		3.5		4.0	3.5	3.0		2.0						3.5			5.5	12.5

	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	TU CMA	TZ CMA
MAX	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	9.7	9.8
MIN	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	10.7	10.5
DUR	5	5	4	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	4	5	4	4	4
TOT		(S)				(S)		(S)		(S)		(S)	(S)					(S)					
0- 1				5.0	8.5			7.0	7.0		6.5		10.5		1.0			7.0					
1- 2				9.5		1.5		6.5							5.5	5.5	10.5	1.5			6.0		
2- 3															10.0		5.0						
3- 4			5.0	4.0	5.0					7.5				1.5	0.0			8.5		3.0			5.5
4- 5			11.0	8.5								7.0			4.5		12.0	2.5				4.5	
5- 6						8.0	8.0						10.5		9.0	5.0	6.0					7.5	
6- 7				3.0	1.0		7.0							9.0		13.0	0.5	9.5	4.0		3.0		
7- 8				7.5			6.5								3.5			4.0	7.0				
8- 9			4.5	11.5		4.5									8.0		7.5			7.0			
9-10			10.5	2.0											12.5	4.5	2.0	11.0			9.0		
10-11				6.0	7.5					7.0			10.5		3.0	12.5		5.5					
11-12	0.5			10.5		0.5		7.5			6.5				7.5		9.0						
12-13				0.5		11.0		7.0							12.0		3.5	12.5		4.5		2.0	
13-14		2.0	4.0	5.0	4.0			6.5	7.5						2.0	4.5		7.0				5.0	
14-15			10.0	9.5											6.5	12.5	10.5	1.0	2.5		6.0	8.0	
15-16	3.5					7.0						7.0	10.0		11.0		4.5		6.0				
16-17				4.0	0.0					7.5				7.0	1.0			8.0	9.0	1.5			
17-18		5.5		8.5	10.5		7.5								5.5	4.0	11.5	2.5		8.5			
18-19			3.5			3.5	7.0								10.0	12.0	6.0						
19-20	7.0		9.5	3.0			6.5				7.0				0.5		0.5	9.5			3.0		
20-21				7.5	6.5								10.0		5.0			4.0					
21-22		8.5		11.5											9.5	3.5	7.5			5.5		2.5	
22-23				2.0		10.0										11.5	1.5	11.0			9.0	5.5	8.5
23-24	10.0		3.0	6.0	3.0			7.5		7.0					4.0			5.0	5.0			8.5	
24-25			9.0	10.5				7.0							8.5		8.5		8.0				
25-26				1.0		6.0		6.5					9.5		13.0	3.5	3.0	12.0		3.0			
26-27				5.0					7.5			6.5		5.0	3.0	11.0		6.5					4.0
27-28				9.5	9.5										7.5		10.0	1.0			6.0		
28-29			2.5			2.5									12.0		4.5						
29-30			8.5	4.0			7.5							12.0	2.5	3.0		8.0					
30-31				8.5	5.5		7.0				7.0		9.5		7.0	11.0	11.5	2.5		7.0		3.0	

	TZ CMA	UU CMA	XZ CMI	AK CMI	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP
MAX	9.8	10.0	9.7	10.1	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7
MIN	10.5	12.5	10.2	11.5	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1
DUR	4	5	3	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3	3
TOT																				2			
	(S)								(S)							(S)		(S)					(S)
0- 1			2.5		6.0			6.0	2.5	4.0	2.0					6.5	1.0					2.5	7.5
1- 2	9.0		6.5	2.0	11.0		1.5	5.0	1.5					5.5	3.0						5.5	8.5	3.5
2- 3		3.5	10.0	5.0			10.0	4.0	0.5		3.0					0.5			5.0	10.0	3.0	4.5	10.0
3- 4				8.0				3.0	7.0	7.5			0.5				3.0				0.5	1.0	6.0
4- 5		7.5	3.5	11.5				2.0	6.0	2.5	4.0	6.0	4.0									7.0	2.0
5- 6	4.5		7.5		1.0	8.5	3.5	1.0	5.0				8.0			12.5			4.0			3.0	8.0
6- 7			11.5	4.0	5.5		12.5	7.5	4.0		5.0	2.5		5.5			5.0					9.0	4.0
7- 8				7.0	10.5	4.0		6.5	3.0	5.5						6.5				10.0	13.0	5.0	10.0
8- 9			5.0	10.5				5.5	1.5	0.5	6.0				3.0				2.5			1.0	6.0
9-10			9.0				6.0	4.5	0.5							0.5	7.0					7.0	2.0
10-11				3.0				3.5	7.5									1.5			6.0	3.0	8.0
11-12			2.5	6.5	0.5			2.5	6.0	4.0			3.0	5.0					1.5		3.5	9.0	4.0
12-13			6.0	9.5	5.0			1.5	5.0				7.0			12.5			13.0	9.5	1.0	5.0	0.0
13-14			10.0		9.5		8.5	0.5	4.0		0.5							3.5				1.0	6.0
14-15				2.0				7.0	3.0	7.5						6.5			0.0			7.5	2.5
15-16		3.5	3.5	5.5				6.0	2.0	2.0	1.5	7.5			3.0				11.5			3.5	8.5
16-17			7.5	8.5		5.5	2.0	5.0	1.0					4.5		0.5		6.0				9.5	4.5
17-18		7.5	11.0	11.5			11.0	4.0	7.5		2.5	3.5		10.5			0.5			9.0		5.5	0.5
18-19				1.0	4.5	1.0		3.0	6.5	5.5			2.0						10.0			1.5	6.5
19-20			5.0	4.5	9.0			1.5	5.5	0.5	3.5		5.5			12.5		8.0			6.0	7.5	2.5
20-21			8.5	7.5			4.5	0.5	4.5								2.5				3.5	3.5	8.5
21-22				10.5				7.5	3.5		4.5			4.0		7.0			9.0		1.5	9.5	4.5
22-23			2.5					6.5	2.5	3.5				10.0	3.0					9.0		5.5	0.5
23-24			6.0	3.5				5.0	1.5		5.5					1.0	4.5					1.5	6.5
24-25	7.5		10.0	6.5	4.0		7.0	4.0	0.5			12.5							7.5			7.5	2.5
25-26				10.0	8.5	7.0		3.0	7.0	7.0	6.5		0.5									4.0	9.0
26-27			3.5					2.0	6.0	2.0		8.5	4.5	3.5		13.0	6.5				11.0	10.0	5.0
27-28			7.5	2.5		2.5	0.5	1.0	5.0				8.5	9.5				1.0	6.5	8.5		6.0	1.0
28-29	3.0	3.5	11.0	5.5			9.5	0.0	4.0			5.0				7.0						2.0	7.0
29-30				9.0				6.5	3.0	5.0					3.0						4.0	8.0	3.0
30-31		7.5	5.0		3.5			5.5	1.5	0.0	1.0	1.0				1.0		3.0	5.0		1.5	4.0	9.0

	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	SS CET	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	SW CYG
MAX	8.5	12.2	12.4	11.6	9.6	9.4	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	9.3
MIN	9.6	14.2	13.2	12.4	10.6	13.0	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	11.8
DUR	4	4	5	4	3	5	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6	5
TOT						2																	2
								(S)		(S)		(S)		(S)				(S)		(S)		(S)	
0- 1	6.5	0.5			5.5				6.0			6.0						8.0			10.5	2.0	
1- 2			3.5		7.5			5.5	6.0		6.5					12.0	7.0			8.0			
2- 3					9.5				6.5			7.5							11.5				
3- 4				1.0	11.5				7.0		8.5										6.0	2.0	
4- 5				4.5	1.0				7.5			9.0				10.0				8.0			
5- 6				8.5	3.0				7.5		10.0							9.0	11.5		8.5		
6- 7			1.0	12.5	5.0			5.0	8.0		5.5						8.5					1.5	
7- 8	6.5				7.0							6.5						7.5		7.5	11.0		
8- 9					9.5		5.5				7.0						7.0		11.0				
9-10			7.0		11.5					5.0		8.0		5.0		12.0						1.5	
10-11				0.0	0.5					5.5	8.5		5.0								6.5		
11-12				4.0	2.5					6.0		9.5		5.0					11.0				
12-13				8.0	5.0					6.5			4.5			9.5		8.5			9.0	1.5	
13-14				12.0	7.0		5.0			6.5	6.0						8.0						
14-15	7.0		4.5		9.0					7.0		7.0						7.0	10.5		11.5		
15-16					11.5	6.5		5.5		7.5	7.5				11.5					13.0		1.5	
16-17					0.5					7.5		8.5											
17-18			10.5		2.5					8.0	9.0					11.5			10.5		7.0		
18-19				3.5	4.5	6.0											9.0			12.5		1.5	
19-20			2.0	7.0	7.0							5.5						8.5			9.5		
20-21				11.0	9.0			5.0	5.0		6.5					9.5	7.5		10.0				
21-22	7.5				11.0	5.5			5.5			7.5						7.0		12.5	12.0	1.0	
22-23					0.0		5.5		6.0		8.0				9.0								
23-24					2.5				6.5			9.0							10.0				
24-25					4.5	5.0			6.5		9.5									12.0	7.5	1.0	
25-26				2.5	6.5				7.0				5.0			11.5	8.5						
26-27				6.5	8.5				7.5			6.0		5.0				8.0	9.5		10.0		
27-28			5.5	10.5	11.0	4.0	5.0		8.0		7.0		5.0				7.0			12.0		1.0	
28-29	7.5				13.0							7.5		4.5		9.0					12.5		
29-30					2.0			5.5			8.5								9.5				
30-31			12.0		4.0	3.5						9.5								11.5		1.0	0.0

	WW CYG	ZZ CYG	AE CYG	CG CYG	DK CYG	KV CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V477 CYG	V704 CYG	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA
MAX	9.9	10.7	11.8	11.0	10.3	11.5	11.5	9.7	10.8	10.8	10.8	8.3	8.3	13.8	9.6	11.0	10.2	10.8	10.0	7.8	9.9	9.9	7.2
MIN	13.2	12.0	12.8	11.8	10.8	12.6	12.3	10.3	11.9	11.6	11.6	9.2	8.7	14.6	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2
DUR	5	4	4	3	4	5	3	3	3	4	4	4	4	4	4	4	3	4	3	5	5	5	4
TOT																				1			
											(S)		(S)									(S)		
0- 1														13.0			0.5	3.0	2.5	5.5			9.0
1- 2		2.0							1.0		12.5			2.5				11.5					
2- 3						13.0									1.0	0.0			7.5		10.0		
3- 4							3.0												9.5	1.0			
4- 5														13.0				4.5	12.0			1.5	
5- 6		11.5	2.5		2.5		1.0		12.0					2.5					1.5				
6- 7		2.5	1.5	0.5	1.0							1.5											9.0
7- 8			1.0																			7.5	
8- 9	12.5	0.0	0.0	13.0										12.5				6.5	8.5				
9-10									1.5					2.5					11.0				
10-11		12.5																	0.5				
11-12				1.5		1.0													3.0	11.0			
12-13							2.0							12.5				8.0			5.0		9.0
13-14		0.5			2.5				12.5					2.0					7.5				
14-15					1.0		0.0				1.0								10.0	6.0			
15-16																		1.5	12.5		11.5		
16-17				2.5										12.5				10.0	2.0				
17-18									2.0	12.5				2.0						1.5		2.5	
18-19		1.5		0.0									12.0				1.0						9.0
19-20							3.0	0.0										3.0	9.0				
20-21				12.5										12.5				11.5	11.5			8.5	
21-22					2.5		1.5							2.0		1.0			1.0				
22-23					1.0														3.0				
23-24		2.0		1.5														5.0					
24-25																			8.0				8.5
25-26	2.5						13.0	0.5	2.5					2.0		0.0			10.5	11.5	6.0		
26-27																			13.0				
27-28		11.5													1.0			6.5	2.0				
28-29		3.0		2.5		2.0	2.5													7.0	12.5		
29-30					2.5							13.0		1.5			0.0						
30-31		0.0			1.0		0.5			1.0									9.5			3.5	8.5

	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	Y LEO	UU LEO
MAX	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	9.5	11.4
MIN	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	12.7	12.7
DUR	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4
TOT	1			1			1																
			(S)										(S)				(S)				(S)		
0- 1		1.5	5.5								6.5		6.0		11.5		3.0						
1- 2		0.5	4.5										5.5	3.5			2.0		1.5			12.5	5.5
2- 3		7.5	3.5		4.5				11.5		8.0		5.5	9.0			1.0			4.5			
3- 4		6.5	3.0		10.0	9.5							5.5			4.5	0.0					4.5	
4- 5	4.5	6.0	2.0							11.5	9.0		5.0	5.5		3.5							
5- 6		5.0	1.0					12.5					5.0	11.0		2.5				6.5			
6- 7		4.0	0.5								10.5		4.5		5.5	1.5					0.5		6.5
7- 8		3.5	7.0		3.5	12.0							4.5	7.0	6.5	0.5	4.0						
8- 9		2.5	6.5		9.5		10.0				11.5		4.5		7.5		3.5					6.0	
9-10		1.5	5.5						10.0		4.0		4.0	3.5	8.5		2.5		2.0		2.5		
10-11		0.5	4.5								13.0		4.0	9.0	9.5		1.5	0.0					
11-12			3.5	9.5							5.0	7.5	4.0		10.5	5.0	0.5	2.0					7.5
12-13	0.0	6.5	3.0		3.0	9.5						7.5	3.5	5.5	11.5	4.0		3.5			4.5		
13-14		6.0	2.0		9.0					10.0	6.5	7.5	3.5	11.0		3.0						7.5	
14-15		5.0	1.0	6.5								7.0	3.0			2.0				12.5			
15-16		4.0	0.5								7.5	7.0	3.0	7.0		1.0	4.5				6.5		
16-17		3.5	7.0			12.0						7.0	3.0			0.5	3.5			1.5			8.0
17-18	5.0	2.5	6.5	3.0	2.5		11.5				9.0	6.5	2.5				3.0		2.5				
18-19		1.5	5.5		8.5							6.5	2.5	9.0	5.5		2.0					9.0	
19-20		1.0	4.5					11.0			10.0	6.0			6.5		1.0			3.5			
20-21			4.0									6.0		5.0	7.5	4.5	0.0						
21-22		7.0	3.0			9.5					11.0	6.0		10.5	8.5	3.5							9.0
22-23		6.0	2.0		2.0						3.5	5.5			9.5	2.5				5.5			
23-24		5.0	1.0		7.5						12.5	5.5		7.0	10.5	1.5						10.5	
24-25		4.0	0.5								5.0	5.0			11.5	0.5	4.0				12.5		
25-26	0.5	3.5	7.0			12.0						5.0					3.0	1.0	3.0			3.0	
26-27		2.5	6.5								6.0	5.0		8.5			2.5	3.0			1.5		10.0
27-28		1.5	5.5		1.0							4.5					1.5	4.5					
28-29		1.0	4.5		7.0				12.0		7.0	4.5		5.0		5.0	0.5					11.5	
29-30			4.0							12.0		4.0		10.5		4.0					3.5		
30-31	6.0	7.0	3.0			9.5					8.5	4.0			5.5	3.0						4.0	

	UV LEO	VZ LEO	T LMI	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	1010 OPH	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI
MAX	9.5	10.6	10.2	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	6.2	10.3	9.5	9.5	11.2	10.5
MIN	10.2	11.7	12.6	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	7.0	13.3	10.2	10.2	12.4	13.2
DUR	3	4	6	4	6	4	5	5	4	5	5	5	5	4	5	5	5	4	4	3	3	5	3
TOT												1			1								
											(S)										(S)		
0- 1	3.5			4.0																2.0	7.0	4.0	
1- 2	8.5		7.5	2.0							4.0		4.0	5.0						8.5	3.5	3.0	
2- 3				0.0		4.0													7.0	4.5		2.0	7.5
3- 4	3.5								12.5				4.5	9.5	5.0					1.0	6.0	0.5	
4- 5	8.5		8.0											3.0					1.0	7.5	2.5		
5- 6						1.0							5.5		10.5	11.5				4.0			
6- 7	3.5					11.5	12.0							8.0						0.0	5.0		
7- 8	8.5	2.5	8.5							3.5			6.0	1.5						6.5	1.5		
8- 9		4.5									8.0	11.0								3.0	8.0		
9-10	3.5	7.0		8.0		8.5							6.5	6.0					6.5		4.5		
10-11	8.5	9.0	9.0	6.0					1.5			8.5				12.0				5.5	0.5		1.5
11-12		11.0		4.0									7.5					13.0	0.5	2.0	7.0		
12-13	3.5			2.0		5.0						6.5		4.5	2.5					8.5	3.5		
13-14	8.5		9.5										8.0					12.5		5.0			4.0
14-15									10.0	7.5		4.0		9.5	8.0					1.0	6.5		
15-16	3.5					2.0							9.0	3.0		13.0		12.0		7.5	2.5		
16-17	8.5		10.0			12.5						2.0							6.5	4.0		8.0	6.5
17-18													9.5	7.5				11.5		0.5	5.5	7.0	
18-19	4.0													1.0					0.5	7.0	1.5	6.0	
19-20	8.5	2.0	10.5			9.5					2.5		10.0				11.5			3.0	8.0	4.5	
20-21		4.5		7.5										6.0							4.5	3.5	
21-22	4.0	6.5		5.5													13.0			6.0	1.0	2.0	
22-23	8.5	8.5	11.0	3.5	11.5	6.0														2.5	7.5	1.0	
23-24		11.0		1.5			12.5							4.5	5.5				6.0		3.5		
24-25	4.0																			5.0			0.5
25-26	8.5		11.5			3.0				1.5				9.0	11.0					1.5	6.5		
26-27											6.5			2.5						8.0	3.0		
27-28	4.0								11.5											4.0			3.0
28-29	8.5		12.0			0.0		12.5						7.5						0.5	5.5		
29-30						10.5						10.0								7.0	2.0		
30-31	4.0							11.5											5.5	3.5	8.5		5.5

	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	RV PER	ST PER	XZ PER	BETA PER	Y PSC	UZ PUP	UZ PUP	U SGE
MAX	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	10.3	9.7	10.6	2.2	9.0	9.7	9.7	6.4
MIN	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	12.7	13.2	12.7	3.5	12.0	10.6	10.3	9.1
DUR	4	3	3	4	4	3	3	6	12	3	3	3	2	4	4	8	5	4	8	7	4	4	6
TOT									4								1						2
			(S)		(S)		(S)				(S)											(S)	
0- 1		1.0	5.5	9.0	3.5	2.0					2.5				4.5							9.0	
1- 2		5.5	1.0	8.0	2.0		0.5					2.0	1.5		1.0			3.0				4.0	
2- 3		1.0	5.5	6.5	1.0		3.5			2.0								6.5			8.5		
3- 4		5.5	1.0	5.0	10.5	2.0						1.0						10.0			3.5		
4- 5		1.0	5.5	3.5	9.0		0.5				1.5						6.0					8.0	13.0
5- 6		5.5	1.0	2.0	8.0		3.5					0.5			7.0							3.0	
6- 7	1.5	1.0	5.5	1.0	6.5	2.0				1.5			1.0		3.5						8.0		
7- 8		5.5	1.0	10.5	5.0		0.5														3.0		
8- 9		1.0	5.5	9.5	3.5		3.5				1.0	2.5						1.0				7.5	
9-10	5.0	5.5	1.0	8.0	2.0	2.0												4.5				2.5	
10-11		1.0	5.5	6.5	1.0		0.5			1.0		1.5			9.5			8.0			7.0		
11-12		5.5	1.0	5.0	10.5		3.5			3.0			1.0		5.5					2.0	2.5		
12-13	8.5	1.0	5.5	3.5	9.5	2.0					0.5	0.5			2.0		4.5					7.0	
13-14		5.5	1.0	2.0	8.0		0.5				2.5		4.0						7.0				
14-15		1.0	5.5	1.0	6.5		3.5			0.5											6.5		
15-16		5.5	1.0	10.5	5.0	2.0				2.5		2.5											
16-17		1.0	5.5	9.5	3.5		0.5				0.0		0.5		8.0			2.5	4.0			6.5	
17-18		5.5	1.0	8.0	2.0		3.5				2.0	1.5			4.5			6.0					
18-19		1.0	5.5	6.5	1.0	2.0			1.0				3.5	4.5	1.0			9.5			6.0		
19-20		5.5	1.0	5.0	10.5		0.5	2.0		2.0		1.0		4.0					0.5			10.5	
20-21		1.0	5.5	3.5	9.5		3.5							3.5			3.0					5.5	
21-22		5.5	1.0	2.5	8.0	2.0					1.5			2.5							10.5		
22-23		1.0	5.5	1.0	6.5		0.5	4.0				3.0		2.0	7.0						5.5		
23-24		5.5	1.0	10.5	5.0		3.5			1.0			3.0	1.5	3.0			0.0				10.0	
24-25		1.0	5.5	9.5	3.5	2.0						2.0		1.0				3.5				5.0	
25-26		5.5	1.0	8.0	2.5		0.5				1.0			0.5		9.5		7.5			9.5		
26-27		1.0	5.5	6.5	1.0		3.5				3.0	1.0								3.5	5.0		
27-28		5.5	1.0	5.0	11.0	2.0				0.5					9.0	9.0						9.5	
28-29	2.5	1.0	5.5	3.5	9.5		0.5			2.5		0.0	3.0		5.5		2.0					4.5	
29-30		5.5	1.0	2.5	8.0		3.5				0.5				2.0	8.0					9.0		
30-31		1.0	5.5	1.0	6.5	2.0					2.5										4.0		

	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				5.0	9.0				1.0	1.0	5.5		4.0		1.0	5.0		3.0	7.0	5.5	13.0	8.0	7.5
1- 2	12.5				5.0	1.5	7.5			2.0	6.0		3.5		1.0	5.0		4.5			5.5		
2- 3	10.0				1.0	3.0	0.0		2.0	2.5	6.5	3.0	3.0	3.0	1.0	5.0		6.0		5.0			
3- 4			9.0		7.0	5.0	9.5			3.0	7.0	7.0	2.0		1.0	5.0		7.5	3.0	9.0	7.0		
4- 5			9.5		3.0	7.0	2.0		3.0	3.5	7.5		1.5		1.0	5.0			4.5	4.0		0.0	
5- 6			10.5		9.0	9.0				4.0	0.0	1.0	0.5	3.5	1.0	5.0		2.0	6.0	8.5	8.5	5.5	
6- 7			11.0		5.0		4.0		4.0	4.5	0.5	5.5	0.0		1.5	5.5		3.5	7.5		1.0	11.0	
7- 8			12.0		1.0					5.5	1.0				1.5	5.5		5.0		7.5	10.0		5.0
8- 9					7.0		6.0		5.0	6.0	2.0			3.5	1.5	5.5		6.5	2.0		2.5		
9-10	10.5				2.5					6.5	2.5	3.5			1.5	5.5		8.0	4.0	6.5	11.5		12.5
10-11					8.5		8.0		6.0	7.0	3.0				1.5	5.5			5.5		4.0	3.0	
11-12		9.0		7.0	4.5		0.5			7.5	3.5			4.0	1.5	5.5		2.5	7.0	6.0	13.0	8.0	
12-13		9.5			0.5		9.5		7.0	8.0	4.0	1.5			1.5	5.5		4.0	8.5		5.5		
13-14		10.5			6.5		2.5			0.5	4.5	6.0			1.5	5.5	3.0	5.5		5.0			
14-15		11.0		1.5	2.5				8.0	1.0	5.0			4.5	1.5	5.5		7.0	3.0	9.5	7.0		2.5
15-16		12.0			8.5	1.5	4.0			1.5	6.0				1.5	5.5			4.5	4.5		0.0	
16-17	11.5				4.5	3.5			9.0	2.5	6.5	4.0			1.5	5.5	4.5	1.5	6.0	8.5	8.5	5.5	10.0
17-18					0.5	5.0	6.0			3.0	7.0			4.5	1.5	5.5		3.0	7.5		1.0	11.0	
18-19					6.0	7.0		0.5	10.5	3.5	7.5				1.5	5.5		5.0		8.0	10.0		
19-20			9.0		2.0	9.0	8.0			4.0	8.0	2.0			1.5	5.5	6.0	6.5	2.0		2.0		
20-21			9.5		8.0		0.5	1.5		4.5	0.5	6.5		5.0	1.5	5.5		8.0	3.5	7.0	11.0		
21-22			10.5		4.0		10.0			5.0	1.0				1.5	5.5			5.0		3.5	3.0	0.0
22-23			11.0	9.0			2.5	2.5		5.5	1.5	0.5			1.5	5.5	7.5	2.5	6.5	6.0	12.5	8.0	
23-24	12.5		12.0		6.0					6.5	2.0	4.5		5.5	1.5	5.5		4.0	8.0		5.0		7.5
24-25	9.5				2.0		4.5	3.5		7.0	3.0				1.5	5.5		5.5		5.5			
25-26				3.5	8.0					7.5	3.5				1.5	5.5	9.0	7.0	2.5		6.5		
26-27					4.0		6.0	4.5		8.0	4.0	3.0		6.0	1.5	5.5		8.5	4.0	4.5		0.0	
27-28		9.0								0.5	4.5	7.0			1.5	5.5			5.5	9.0	8.0	5.5	
28-29		9.5			5.5		8.0	5.5		1.0	5.0				1.5	5.5	10.5	3.0	7.5	4.0	0.5	11.0	
29-30		10.5			1.5	1.5	0.5			1.5	5.5	1.0		6.0	2.0	6.0		4.5		8.0	9.5		
30-31		11.0			7.5	3.5	10.0	6.5		2.0	6.5	5.0	7.0	0.0	2.0	6.0		6.0	2.0		2.0		5.0

AAVSO Eclipsing Binary Ephemeris for January 2020 all times in U.T.
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	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	AY VUL	BE VUL	BS VUL	BT VUL	BU VUL	CD 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	9.9	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	12.9	11.4	11.5	12.5	11.4	12.6
DUR	4	4	4	4	4	4	3	3	3	3	4	6	5	4	5	3	3	3	4
TOT					(S)			(S)		(S)									
0- 1	2.0	9.5			8.5	9.5	7.0				12.0								
1- 2	3.5		10.5	9.0								0.5							
2- 3	4.5				9.5					7.0			1.5			0.5	1.5		
3- 4	6.0		9.0					7.5		8.5									
4- 5	7.0	10.0		5.5															
5- 6	8.0		7.0		6.0						9.5								
6- 7	9.5			6.5			7.5		7.5						0.5				
7- 8	10.5		5.5		7.0														
8- 9	12.0	10.5	12.5	7.5															1.0
9-10	0.5				8.0			8.0			11.5								
10-11	1.5		10.5	8.0						8.0							1.5	2.0	
11-12	3.0				8.5														
12-13	4.0		9.0	9.0			8.0						13.0			0.0			
13-14	5.0				9.5	12.5			7.5										
14-15	6.5		7.0								9.5							1.5	
15-16	7.5			5.5				8.5											
16-17	9.0		5.5		6.0														
17-18	10.0	8.5	12.5	6.5			7.0			8.0									
18-19	11.0				7.0						11.5						1.0	1.0	
19-20	12.5		10.5	7.5		11.5													
20-21	1.0				8.0			7.5	7.5										
21-22	2.0	9.0	9.0	8.5															0.5
22-23	3.5				9.0											0.0		0.5	
23-24	4.5		7.0	9.0			7.5				9.0		0.5						
24-25	5.5				9.5					8.0									
25-26	7.0	9.5	5.5			11.0													
26-27	8.0		12.0	5.5				7.5									0.5	0.0	
27-28	9.5				6.0				7.0		11.0		1.5						
28-29	10.5		10.5	6.5					8.5					1.0					
29-30	11.5	9.5			7.0		8.0												
30-31	0.5		9.0	7.5															

AAVSO Eclipsing Binary Ephemeris for February 2020 all times in U.T.
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	RT AND	UU AND	WZ AND	XZ AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	CX AQR	XZ AQL	OO AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR
MAX	9.3	11.2	11.6	10.0	9.3	11.1	11.1	11.3	8.6	10.8	10.7	9.3	9.2	10.6	9.0	10.1	10.1	5.7	5.7	10.9	10.9	6.0	6.0
MIN	10.2	14.1	12.6	13.0	10.2	11.6	11.6	11.7	9.5	11.4	12.0	11.2	10.1	12.3	10.4	11.1	11.1	6.4	6.4	11.4	11.4	6.7	6.7
DUR	3	8	4	3	3	4	4	3	4	4	3	7	3	4	4	3	3	5	5	4	4	5	5
TOT					(S)		(S)			(S)							(S)		(S)		(S)		(S)
0- 1							3.5	2.0		2.5						4.0				9.0	2.0		
1- 2			1.5				3.5	0.0		2.5							4.0				5.5		
2- 3		1.5		0.5			3.0		4.5	3.0				12.0		4.5		1.0		2.0	9.0		
3- 4	11.5		3.5				2.5			3.0							5.0		7.0	5.5			
4- 5	2.5				3.0		2.5		0.5	3.5						5.0	0.5			8.5	2.0		
5- 6		1.0			3.0		2.0	4.0	5.5	3.5						0.5					5.0		
6- 7				2.0	3.0		1.5	2.0		4.0	0.0						1.0			1.5	8.5		
7- 8					3.0		1.5	0.5	1.5	4.0						1.5		2.0		5.0			
8- 9	12.0	0.0	0.5		2.5	13.0	1.0			4.5							2.0		8.5	8.0	1.5		
9-10	3.5				2.5	12.5	0.5			4.5					11.5	2.0					4.5		
10-11			2.5	3.5	2.5	12.0	0.5		2.5	5.0							2.5			1.0	8.0		
11-12	0.5				2.5					5.0	0.0					3.0				4.5			0.5
12-13			4.5		2.5			2.5		5.5		12.5					3.0	3.5		8.0	1.0		
13-14	13.0				2.0			1.0	4.0	5.5			11.0			3.5			9.5	11.0	4.5	2.5	
14-15	4.0			5.5	2.0					6.0			11.5				4.0			1.0	7.5		
15-16					2.0								11.5			4.5				4.0	11.0		4.0
16-17	1.5				2.0				5.0		0.5		12.0				4.5			7.5	0.5		
17-18			1.5		2.0											5.0	0.0	4.5		11.0	4.0	5.5	
18-19					1.5			3.0	1.0							0.5				0.5	7.5		
19-20			3.5		1.5			1.5	6.5								1.0			4.0	10.5		7.0
20-21					1.5											1.0				7.0	0.5		
21-22	2.0			0.5	1.5				2.5		0.5						1.5			10.5	3.5	9.0	
22-23					1.5											2.0		5.5		0.0	7.0		
23-24					1.0												2.5			3.5	10.5		
24-25			0.5		1.0			3.5	3.5							2.5				7.0	0.0		
25-26	12.0			2.0	1.0			1.5									3.0			10.0	3.5		
26-27	3.0		2.5		1.0						0.5			11.5		3.5			0.5		6.5		
27-28					0.5				4.5								3.5	7.0		3.0	10.0		

	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	TU CMA	TZ CMA	TZ CMA	UU CMA
MAX	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	9.7	9.8	9.8	10.0
MIN	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	10.7	10.5	10.5	12.5
DUR	4	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	4	5	4	4	4	4	5
TOT				(S)		(S)		(S)		(S)	(S)					(S)						(S)	
0- 1					6.5			5.5					11.5		6.0		3.5			6.0			
1- 2		3.0		9.0	5.5					5.5			1.5		0.0	9.5	7.0		2.5				
2- 3	2.0	7.5	2.0		5.0		7.0		6.5				6.0	2.5	13.0	3.5							
3- 4	7.5				4.5		5.5						10.5	10.5	7.0			4.0					
4- 5		2.0		5.0		7.5				4.5	9.5		0.5		1.5	10.5							
5- 6		6.5				7.0		7.0	5.5			3.0	5.0			5.0							
6- 7			8.5			6.5		6.0		6.5			9.5	2.0	8.5								
7- 8	1.5	1.0		1.5		5.5		5.0						10.0	3.0	12.0		1.5		0.5			
8- 9	7.0	5.0				5.0	7.5		5.0			10.5	4.5			6.5	2.5			3.5			
9-10		9.5	4.5			4.5	6.0			6.0	9.0		9.0		10.0	0.5	5.5		5.5	6.5			
10-11					7.5		5.0		7.0					2.0	4.0								3.5
11-12		4.0		8.0	7.0								3.5	9.5		7.5							
12-13	1.0	8.5	1.0		6.5			6.5		5.0			8.0		11.0	2.0		5.5					7.5
13-14	6.5				5.5			5.5	6.0				12.5		5.5								
14-15		3.0		4.0	5.0					7.0	9.0		2.5	1.5		9.0			2.5		7.0		
15-16		7.5			4.5		7.0			4.5		1.0	7.0	9.5	12.5	3.5							
16-17			7.5			7.5	5.5		5.5				11.5		7.0		1.5	2.5		1.0		6.0	
17-18	0.0	2.0		0.5		7.0				6.5			2.0		1.5	10.5	4.5			4.0			
18-19	6.0	6.5				6.5		7.0				8.5	6.5	1.0		5.0	8.0				2.5		
19-20			3.5			5.5		6.0	5.0		8.5		11.0	9.0	8.5								
20-21		1.0				5.0		5.0		6.0			1.0		2.5	12.0						1.5	
21-22		5.5		7.0		4.5	7.5		6.5				5.5			6.0		7.0					
22-23		9.5	0.0		7.5		6.5						10.0	1.0	9.5	0.5			5.5				
23-24	5.5				7.0		5.0			5.0			0.0	8.5	4.0								3.5
24-25		4.0		3.5	6.5				6.0		8.5		4.5			7.5	0.0						
25-26		8.5			5.5			6.5		7.0			9.0		11.0	2.0	3.5	4.0		1.5			7.5
26-27			6.5		5.0			5.5						0.5	5.5		6.5			4.5			
27-28		3.0			4.5				5.5				4.0	8.5		9.0			2.5				

	XZ CMI	AK CMI	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP
MAX	9.7	10.1	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2
MIN	10.2	11.5	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1	9.6	14.2
DUR	3	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3	3	4	4
TOT																		2					
							(S)							(S)		(S)					(S)		
0- 1	8.5	1.5	8.0		3.0	4.5	0.5					3.0								0.0	5.0		
1- 2		5.0	12.5		12.0	3.5	7.5		2.0									8.0		6.0	1.0		
2- 3	2.5	8.0				2.5	6.5	3.5			3.5			13.0		5.0	4.0			2.0	7.0		13.0
3- 4	6.0					1.5	5.0		3.0											8.0	3.0		12.5
4- 5	10.0	0.5			5.5	0.5	4.0	12.0	11.5										11.5	4.0	9.0	8.0	12.0
5- 6		4.0	2.5	4.0		7.0	3.0		4.0			3.0	3.0				2.5		9.0	0.0	5.0		12.0
6- 7	3.5	7.0	7.5			6.0	2.0	1.5	12.5	9.5				1.0	1.5			8.0		6.5	1.5		11.5
7- 8	7.5		12.0			5.0	1.0													2.5	7.5		11.0
8- 9					8.0	4.0	0.0			6.0							1.5		2.0	8.5	3.5		11.0
9-10	1.0	3.0				3.0	6.5	5.0			2.0			13.0	4.0		12.5			4.5	9.5	0.0	10.5
10-11	5.0	6.0				2.0	5.5			2.0	6.0	2.5								0.5	5.5		10.0
11-12	8.5	9.0	2.0		1.5	0.5	4.5					8.5					0.0	7.5		6.5	1.5	8.0	10.0
12-13			7.0		10.0	7.5	3.5						3.0		6.0		11.5			2.5	7.5		9.5
13-14	2.0	2.0	11.5			6.5	2.5	3.0						1.0		0.5			12.0	8.5	3.5		9.0
14-15	6.0	5.0		5.5		5.5	1.5		0.5										9.5	4.5	9.5		9.0
15-16	10.0	8.5			4.0	4.0	0.5	11.5				2.0					10.0			0.5	5.5		8.5
16-17				1.0	12.5	3.0	7.0		1.5		1.0	8.0		13.0		2.5		7.0		6.5	1.5	0.5	8.0
17-18	3.5	1.0	1.5			2.0	6.0	1.5		11.0	5.0								2.5	3.0	8.0		
18-19	7.5	4.0	6.5			1.0	5.0		2.5								9.0			9.0	4.0	8.5	
19-20		7.5	11.0		6.5	0.0	4.0		11.0				3.0			4.5				5.0	10.0		
20-21	1.0					6.5	3.0	4.5	3.5			1.5		1.0						1.0	6.0		
21-22	4.5	0.0		11.5		5.5	2.0		12.0	3.5		7.5					7.5	7.0		7.0	2.0		
22-23	8.5	3.5				4.5	0.5		4.5										12.0	3.0	8.0		
23-24		6.5	1.0		8.5	3.5	7.5							13.0	1.0				10.0	9.0	4.0	0.5	
24-25	2.0	9.5	5.5			2.5	6.5	3.0			3.5						6.5			5.0	0.0		5.5
25-26	6.0		10.5	2.5		1.5	5.5					1.0								1.0	6.0	8.5	5.0
26-27	9.5	2.5			2.5	0.5	4.0	11.5				7.0	3.0		3.0			6.5	2.5	7.0	2.0		4.5
27-28		5.5			11.0	7.0	3.0					13.0		1.0			5.0		0.5	3.0	8.0		4.5

	DL CEP	DV CEP	EG CEP	SS CET	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	SW CYG	WW CYG	ZZ CYG
MAX	12.4	11.6	9.6	9.4	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	9.3	9.9	10.7
MIN	13.2	12.4	10.6	13.0	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	11.8	13.2	12.0
DUR	5	4	3	5	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6	5	5	4
TOT				2																	2		
						(S)		(S)		(S)		(S)				(S)		(S)		(S)			
0- 1			6.5			3.0		5.0		5.0	4.0			7.0		9.0		5.5	8.0				
1- 2	3.0	2.0	8.5		5.0			5.5	6.0			4.0			8.5		9.0						12.5
2- 3		6.0	10.5	3.0	3.5			6.0		6.5	4.0			11.0		7.5		11.5	10.5				
3- 4		10.0	13.0			5.0		6.5	7.5			3.5			7.0								9.5
4- 5	9.0		2.0			4.0		6.5		8.0	3.5					6.0	8.5						0.5
5- 6			4.0	2.5	5.5	3.0	3.0	7.0	9.0	4.0		3.5		9.0	5.5			11.0	6.0				
6- 7	0.5		6.0		4.5		3.5	7.5	4.5	9.5	3.0					4.5							
7- 8			8.0		3.0		4.0	8.0		5.5		3.0				8.5	8.5		8.5				
8- 9		1.5	10.5	1.5		5.0	4.0		6.5		3.0			6.5	8.0			11.0					10.5
9-10		5.0	12.5			3.5	4.5			7.0		2.5				7.0			11.0				
10-11		9.0	1.5		5.5		5.0		8.0			5.0		11.0	6.5		8.0						
11-12		13.0	3.5	1.0	4.0		5.0		3.5	8.5	5.0					6.0		10.5					
12-13	13.0		6.0		3.0	5.5	5.5		9.5	4.5		5.0			5.0				6.5				
13-14			8.0			4.5	6.0		5.0		4.5			8.5	9.0		8.0						11.0
14-15	4.0		10.0	0.5		3.5	6.5			6.0		4.5				8.5		10.5	9.0			0.0	
15-16		0.5	12.5		5.0		6.5		6.5		4.5			13.0	7.5								
16-17		4.5	1.5		3.5		7.0	3.0		7.5		4.0		6.5		7.0	7.5		11.5				
17-18	10.0	8.5	3.5			5.5	7.5	3.5	8.0		4.0				6.0			10.0	4.5				
18-19		12.5	5.5			4.0	8.0	4.0	4.0	9.0		4.0		10.5		5.5							11.5
19-20	1.5		8.0			3.0		4.0	10.0	5.0	3.5				4.5		7.5		7.0				
20-21			10.0		4.5			4.5	5.5			3.5			8.5			10.0		0.5			
21-22			12.0		3.5			5.0		6.5	3.5			8.5		8.0			9.5				0.0
22-23			1.0			5.0		5.5	7.0			3.0	10.5		7.0		7.0						
23-24		4.0	3.5			3.5		5.5		8.0	3.0			13.0		6.5		9.5	12.0	0.5			12.5
24-25		7.5	5.5		5.5			6.0	8.5	3.5		3.0		6.0	6.0		13.0		5.0				
25-26		11.5	7.5		4.0			6.5	4.5	9.5	2.5					5.0	7.0						9.5
26-27			9.5		3.0			7.0		5.5	5.0			10.5		9.0		9.0	7.5	0.0	10.5		1.0
27-28	5.0		12.0			4.5	3.0	7.0	6.0			5.0			8.5		12.5						

	AE CYG	CG CYG	DK CYG	KV CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V704 CYG	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA	UZ DRA	AI DRA	TZ ERI	YY ERI	YY ERI	RW GEM
MAX	11.8	11.0	10.3	11.5	11.5	9.7	10.8	10.8	10.8	13.8	9.6	11.0	10.2	10.8	10.0	7.8	9.9	9.9	7.2	9.8	8.4	8.4	9.6
MIN	12.8	11.8	10.8	12.6	12.3	10.3	11.9	11.6	11.6	14.6	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12.6	9.1	9.1	11.6
DUR	4	3	4	5	3	3	3	4	4	4	4	4	3	4	3	5	5	5	4	4	3	3	5
TOT																1				1			1
									(S)									(S)				(S)	
0- 1								10.5						8.0	12.0	2.5						2.0	
1- 2		12.5								12.0					1.0						5.0	1.5	
2- 3									12.5	1.5								10.0			4.5	0.5	
3- 4					12.0	11.0	0.5					12.5		1.5	6.0						3.5		8.0
4- 5														10.0	8.5		1.0				2.5		
5- 6										12.0					11.0				8.5		1.5		
6- 7										1.5					0.0						1.0	4.5	4.5
7- 8			1.0				11.5					11.5		3.0			7.0			1.5	0.0	4.0	
8- 9	0.5	11.0		10.5										11.5		12.5						3.0	
9-10						11.5			11.5	11.5					7.5							2.0	1.5
10-11										1.5			13.0		10.0						5.0	1.5	
11-12											13.0			5.0	12.5	8.0			8.0		4.5	0.5	
12-13					11.5													4.5	13.0		3.5		
13-14		12.5								11.5											2.5		
14-15										1.0					6.5	3.0					2.0		
15-16			1.0		1.0	12.0	12.0							6.5	9.0			11.0			1.0	5.0	
16-17									10.5						11.5						0.0	4.0	
17-18										11.5					0.5		2.0		8.0			3.0	
18-19								12.5		1.0									13.0			2.0	
19-20					12.5									8.5	5.5						5.0	1.5	
20-21		11.0													8.0		8.5			2.0	4.5	0.5	
21-22						12.0				11.5					10.5						3.5		
22-23										1.0				1.5	13.0						2.5		
23-24	12.5		1.0				12.5							10.0					8.0		2.0		
24-25	12.0				0.0														12.5		1.0	5.0	
25-26	11.0	12.0		11.5				11.5		11.0					7.0	8.5		5.5			0.0	4.0	
26-27										1.0		12.5		3.0	9.5							3.0	6.0
27-28						12.5								12.0	12.0							2.5	

	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	UV LEO	VZ LEO	T LMI	RR LEP
MAX	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	9.5	10.6	10.2	10.2
MIN	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	10.2	11.7	12.6	10.9
DUR	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	6	4
TOT			1																				
									(S)				(S)				(S)						
0- 1								4.0	8.0	6.5	6.5	2.0				11.5			11.0	8.5	2.0	12.5	
1- 2	0.5						9.5	3.5	7.5		7.5	1.0									4.0		5.0
2- 3	6.5		8.5	9.5			2.0	3.5	7.5	3.0	8.5	0.0				0.5			3.5	4.0	6.5		3.0
3- 4		12.0					11.0	3.0	7.0	8.5	9.5		3.0							8.5	8.5	13.0	1.0
4- 5					10.5		3.0	3.0	7.0				2.0					5.5			10.5		
5- 6				12.0				3.0	7.0	4.5			1.0			3.0			12.0	4.0			
6- 7							4.5	2.5	6.5	10.0			0.0							8.5			
7- 8	6.0					10.0		2.5	6.5										4.5				
8- 9		9.5					5.5	2.0	6.0	6.5		2.5		0.5		5.0				4.0			
9-10								2.0	6.0		3.5	1.5		2.0				7.0		8.5			
10-11							7.0	2.0	6.0	2.5	4.5	0.5					12.0						
11-12			10.0		8.5			1.5	5.5	8.0	5.5									4.0			
12-13	5.0	12.0					8.0	1.5	5.5		6.5		2.5				1.0		5.0	8.5	1.5		4.5
13-14								1.5	5.0	4.5	7.5		1.5								4.0		2.5
14-15							9.0	1.0	5.0	10.0	9.0		0.5					8.5		4.0	6.0		0.5
15-16							1.5	1.0	5.0		10.0			13.0			3.0			8.5	8.0		
16-17						8.5	10.5	0.5	4.5	6.0		3.0						1.0			10.5		
17-18	4.5	9.5					3.0	0.5	4.5			2.0				11.0			6.0	4.0			
18-19							11.5	0.5	4.0	2.5		1.0					5.0			8.5			
19-20				10.5			4.0		4.0	8.0		0.0						10.0					
20-21			11.5					8.0	4.0				2.5			13.0				4.0			
21-22		11.5					5.5	7.5	3.5	4.0	3.5		2.0					2.5		8.5			
22-23	4.0			13.0				7.5	3.5	9.5	4.5		1.0			2.0			7.0				
23-24	9.5				12.0	12.0	6.5	7.0	3.5		5.5			1.5	0.0					4.0			4.5
24-25								7.0	3.0	6.0	7.0							11.0		8.5	1.5		2.5
25-26							7.5	7.0	3.0		8.0	2.5				4.0					3.5		0.5
26-27		9.5						6.5	2.5	2.0	9.0	1.5						3.5		4.0	5.5		
27-28	3.5						9.0	6.5	2.5	8.0	10.0	0.5					11.0		8.0	8.5	8.0		

	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	V839 OPH	1010 OPH	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI
MAX	10.4	4.8	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.8	5.8	10.5	8.8	6.2	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7
MIN	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	9.4	7.0	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3
DUR	6	7	4	5	5	4	5	5	5	4	5	5	5	3	4	4	3	3	5	3	4	3	3
TOT									1		1												
								(S)										(S)					(S)
0- 1									8.0	6.0								4.5			6.5	5.5	1.0
1- 2			7.5		10.0		5.5				3.0						6.0	1.0				1.0	5.5
2- 3									5.5								2.5					5.5	1.0
3- 4					9.0					4.0	8.5							4.0				1.0	5.5
4- 5	10.5		4.0						3.5								5.5	0.0				5.5	1.0
5- 6																	1.5					1.0	5.5
6- 7								0.5	1.0	2.5						5.0		3.0	6.0			5.5	1.0
7- 8			1.0			9.0								9.5			4.5		5.0			1.0	5.5
8- 9			11.5							7.0							0.5	6.0	4.0			5.5	1.0
9-10										1.0								2.0	2.5			1.0	5.5
10-11											1.0						3.5		1.5	2.0		5.5	1.0
11-12			8.5	10.5						5.5		9.0						5.0	0.5			1.0	5.5
12-13											6.0						6.5	1.5				5.5	1.0
13-14								4.5								5.0	2.5			4.5		1.0	5.5
14-15	12.0		5.5							4.0								4.0				5.5	1.0
15-16																	5.5	0.5				1.0	5.5
16-17												9.5		9.5			2.0				0.5	5.5	1.0
17-18	9.0		2.0							2.0			8.5					3.0				1.0	5.5
18-19			12.5														4.5					5.5	1.0
19-20							3.5			7.0			10.0				1.0	6.0			4.0	1.0	5.5
20-21						11.0				0.5						4.5		2.5				5.5	1.0
21-22			9.5						7.0		4.0	10.5	11.5				3.5					1.0	5.5
22-23		12.5								5.5							0.0	5.0			7.5	5.5	1.0
23-24									5.0		9.0				12.5		6.5	1.5				1.0	5.5
24-25			6.5														3.0			1.0		5.5	1.0
25-26									2.5	3.5				9.5	12.5			4.5	6.5			1.0	5.5
26-27							8.0					11.5					5.5	0.5	5.5			5.5	1.0
27-28	10.5		3.0						0.5						12.0	4.0	2.0		4.5	3.5		1.0	5.5

	GU ORI	GU ORI	U PEG	U PEG	BB PEG	BB PEG	BX PEG	DI PEG	Z PER	RT PER	RV PER	ST PER	XZ PER	BETA PER	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU
MAX	12.6	12.6	9.7	9.7	10.6	10.6	10.9	9.6	9.9	10.6	10.3	9.7	10.6	2.2	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0
MIN	13.5	13.5	10.5	10.5	11.2	11.2	11.5	10.8	12.4	12.0	12.7	13.2	12.7	3.5	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5
DUR	4	4	3	3	3	3	3	2	6	4	8	5	4	8	4	4	6	5	4	4	4	4	4
TOT									2			1					2						1
		(S)		(S)		(S)										(S)						(S)	
0- 1		5.0		0.5	0.0						7.5		1.5			9.0				10.5	12.0		
1- 2		3.5											5.0			4.0				7.5		6.5	
2- 3	8.0	2.5	1.5							8.0	7.0		9.0		8.5			13.0				7.0	
3- 4	6.5	1.0		0.0					1.0	4.0					3.5							8.0	
4- 5	5.0						0.5			0.5	6.0					8.0						8.5	
5- 6	3.5		1.5									0.5		5.5		3.0						9.5	5.0
6- 7	2.5	8.0		0.0					2.0		5.5				8.0							10.5	
7- 8	1.0	6.5						2.0							3.0					11.0		11.0	
8- 9		5.0	1.5							6.5	5.0		3.0	2.5		7.5			12.5	8.0		12.0	
9-10		4.0		0.0	1.0				3.5	3.0			6.5			2.5					6.5		
10-11	8.0	2.5									4.5				7.0						7.0		
11-12	6.5	1.0	1.5			0.5	0.5								2.5						8.0		
12-13	5.0			0.0				1.5	5.0		3.5					7.0					8.5		
13-14	4.0				0.5											2.0					9.5		
14-15	2.5	8.0	1.5							5.0	3.0				6.5					12.0	10.0		
15-16	1.0	6.5		0.0		0.0			6.5	1.5			1.0		1.5					9.0	11.0		
16-17		5.0									2.5		4.5			6.5					12.0		7.0
17-18		4.0	1.5					1.0					8.0			1.5	11.5		12.5			6.5	
18-19	8.0	2.5		0.0			1.0				2.0	6.5			6.0							7.0	
19-20	6.5	1.0								7.5					1.0							8.0	1.5
20-21	5.0		1.5				0.0			4.0	1.0					5.5						8.5	
21-22	4.0									0.5						0.5			11.0	13.0		9.5	
22-23	2.5	8.0						1.0			0.5				5.5					10.0		10.0	
23-24	1.0	6.5	1.5										2.5		0.5					7.0		11.0	
24-25		5.0				1.0							6.0			5.0						11.5	
25-26		4.0								6.0				7.5		0.0							
26-27	8.0	2.5	1.5		1.0					2.5		5.0			5.0				13.0		7.0		
27-28	6.5	1.0					0.5	0.5													8.0		

	RZ TAU	TY TAU	WY 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	RU UMI	VV VIR	AG VIR	AH VIR	AH VIR
MAX	10.5	11.5	11.5	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	10.7	11.7	8.8	9.7	9.7
MIN	11.2	12.0	11.7	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	11.4	13.5	9.4	10.2	10.2
DUR	3	2	4	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	4	4	4
TOT						(S)					(S)			(S)									(S)
0- 1	3.5	5.5	2.5		2.5	7.0				2.0	6.0	12.0	7.5	3.5	7.5	11.0			1.5				8.0
1- 2		7.0			3.5					2.0	6.0		0.5	5.0	2.0	3.5	3.0	12.0	2.5		7.0	8.5	3.5
2- 3	5.5		4.5		4.0		3.5	5.0	0.5	2.0	6.0		2.0	6.5	6.5	12.5	8.5		4.0	10.0		4.0	9.0
3- 4	1.5				4.5	0.5		4.0		2.0	6.0		3.5	8.0		5.0			5.0	7.5	5.5	9.5	4.5
4- 5	7.0		6.5		5.0	1.0		3.5		2.0	6.0		5.0	1.0	5.5				6.5		12.0	5.0	9.5
5- 6	3.0				5.5	1.5	1.5	3.0	1.0	2.0	6.0		6.5	2.5		6.5			7.5		3.5		5.5
6- 7			8.0		6.0	2.0		2.0		2.0	6.0		8.5	4.0	5.0		0.5	2.5	8.5	10.5	10.5	6.0	
7- 8	5.0		1.0		7.0	2.5		1.5		2.0	6.0		1.5	5.5	9.5	8.0	5.5		10.0	8.0			6.0
8- 9	1.0					3.5		1.0	1.5	2.0	6.0		3.0	7.0	4.0	0.5	11.0	9.5	11.0		8.5	6.5	
9-10	7.0		2.5			4.0	4.0	0.0		2.0	6.0		4.5	0.0	8.5	9.5			12.5				7.0
10-11	3.0				0.5	4.5				2.0	6.0		6.0	1.5	3.5	2.0			1.0		7.0	7.5	
11-12			4.5		1.0	5.0			1.5	2.0	6.0		7.5	3.0	7.5	11.0			2.0	8.0			8.0
12-13	5.0	2.0			1.5	5.5	2.0			2.0	6.0		0.5	4.5	2.5	3.5	3.0		3.5		5.0	8.5	3.5
13-14	0.5	3.5	6.5		2.0	6.0				2.0	6.0		2.0	6.0	7.0	12.5	8.5	0.0	4.5		12.0	4.0	9.0
14-15	6.5	5.5			2.5	6.5			2.0	2.0	6.0		3.5	7.5	2.0	5.0			5.5		3.5	9.5	4.5
15-16	2.5		8.5		3.0		0.5			2.0	6.0		5.0	0.5	6.0			7.0	7.0	8.5	10.5	5.0	
16-17			1.0	1.0	4.0		4.5			2.0	6.0		6.5	2.5		6.5			8.0				5.5
17-18	4.5				4.5	0.5			2.5	2.0	6.0		8.0	4.0	5.5		0.5		9.5		8.5	6.0	
18-19	0.5		3.0	2.0	5.0	1.0				2.0	6.0		1.0	5.5		8.0	5.5		10.5				6.5
19-20	6.5				5.5	1.5	2.5			2.0	6.0		2.5	7.0	4.5	0.5	11.0		11.5	9.0	7.0	6.5	
20-21	2.5		4.5	3.0	6.0	2.0			2.5	2.0	6.0		4.0	8.5	9.0	9.5			0.5	6.5			7.0
21-22					6.5	2.5				2.5	6.5		5.5	1.5	3.5	2.0			1.5		5.0	7.5	
22-23	4.0		6.5	4.0		3.0	1.0			2.5	6.5		7.0	3.0	8.0	11.0		4.5	2.5		12.0		8.0
23-24	0.0					3.5	5.0		3.0	2.5	6.5		0.0	4.5	3.0	3.5	3.0		4.0	9.5	3.5	8.5	3.5
24-25	6.0		8.5	5.0	0.0	4.5				2.5	6.5		1.5	6.0	7.0	12.5	8.5	12.0	5.0	6.5	10.5	4.0	9.0
25-26	2.0	0.0	1.0		1.0	5.0				2.5	6.5	0.0	3.5	7.5	2.0	5.0			6.0			9.5	4.5
26-27		2.0		6.5	1.5	5.5	3.0		3.5	2.5	6.5		5.0	0.5	6.5				7.5		8.5	5.0	
27-28	4.0	3.5	3.0		2.0	6.0				2.5	6.5		6.5	2.0		6.5			8.5	9.5			5.5

	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	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	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	3	3	3	3	4	6	5	4	5	4	3	3	3	4
TOT			(S)		(S)										
0- 1	10.0		6.5		7.5	13.0									
1- 2			8.0			8.5									
2- 3		5.5		6.0				12.0				10.5			
3- 4		7.0		7.0											
4- 5		8.5		8.0						12.5					
5- 6			5.5		5.0	10.5									
6- 7	9.5		7.0		6.5	6.0		13.0					10.5		
7- 8					7.5									12.5	
8- 9		6.0													11.5
9-10		7.5		5.5		12.5									
10-11				7.0		8.0									13.0
11-12			6.0	8.0					12.5			11.5		12.0	
12-13	8.5		7.5									10.0			
13-14					6.0										
14-15		6.0			7.5	10.5									
15-16		7.5				6.0								12.0	
16-17			5.0	5.5											
17-18			6.5	6.5											
18-19	8.0		8.0	8.0		12.5				11.5					
19-20	12.5	5.0				8.0								11.5	
20-21		6.5			6.0										
21-22		8.0			7.0						12.5	11.0			11.5
22-23			5.5		8.5							10.0			
23-24			7.0	5.5		10.0		11.5			11.5			11.0	12.5
24-25	7.0		8.5	6.5											
25-26	11.5	5.5		7.5											
26-27		7.0					11.5								
27-28					6.0	12.0		12.0							

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	RT AND	UU AND	WZ AND	XZ AND	AB AND	AD AND	AD AND	BD AND	BX AND	DS AND	RY AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR	AP AUR	AP AUR
MAX	9.3	11.2	11.6	10.0	9.3	11.1	11.1	11.3	8.6	10.8	8.8	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1	5.7	5.7	10.9	10.9
MIN	10.2	14.1	12.6	13.0	10.2	11.6	11.6	11.7	9.5	11.4	10.1	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1	6.4	6.4	11.4	11.4
DUR	3	8	4	3	3	4	4	3	4	4	5	7	3	3	7	4	4	3	3	5	5	4	4
TOT															3								
					(S)		(S)							(S)					(S)		(S)		(S)
0- 1				4.0	0.5				0.5					10.0			9.5						3.0
1- 2					0.5									10.5	12.0		12.0						6.5
2- 3								2.0						11.0							2.0	3.0	
3- 4	10.0								2.0		12.0			11.0					0.5	8.0		6.0	
4- 5	1.0		1.5					9.5						11.5				1.0					2.5
5- 6														12.0					1.5				6.0
6- 7									3.0					12.0				1.5				2.5	9.5
7- 8																			2.0		3.0	6.0	
8- 9	10.5																	2.5				9.0	2.5
9-10	1.5							1.0	4.5										3.0				5.5
10-11						2.5		10.0								9.5		3.0				2.0	9.0
11-12			0.5			2.0											11.0					5.5	
12-13						2.0				0.5											4.0	9.0	2.0
13-14	11.5		2.5			1.5				1.0		11.0											5.5
14-15	2.5					1.0			1.5	1.0												2.0	8.5
15-16				2.0		1.0		1.0		1.5												5.0	
16-17						0.5	12.5	10.5		1.5			9.5									8.5	1.5
17-18							12.0		2.5	2.0			9.5					1.0			5.5		5.0
18-19	12.0						11.5			2.0			10.0		11.0				1.0			1.5	8.5
19-20				4.0			11.5			2.5			10.5					1.5				5.0	
20-21	9.5		1.5				11.0		4.0	2.5			10.5						2.0			8.0	1.5
21-22	0.5						10.5	1.5		3.0			11.0			11.0	10.0	2.0					4.5
22-23							10.5	11.0		3.0			11.0				12.5		2.5		6.5	1.0	8.0
23-24										3.5			11.5					3.0				4.5	
24-25										3.5			12.0						3.5			8.0	1.0
25-26	10.0	2.0							1.0	4.0													4.5
26-27	1.0									4.0										1.5		1.0	7.5
27-28			0.5					2.0													8.0	4.0	
28-29		1.5							2.0			10.5										7.5	0.5
29-30			2.5					9.5															4.0
30-31	11.0			0.5														0.5				0.5	7.5

	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	TU CMA	TZ CMA
MAX	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	9.7	9.8
MIN	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	10.7	10.5
DUR	5	5	4	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	4	5	4	4	4
TOT		(S)				(S)		(S)		(S)		(S)	(S)					(S)					
0- 1					3.0		3.0	7.0	6.0			3.5	8.5				6.5			1.0			
1- 2				2.0			2.5	6.5	4.5		4.5				3.0		1.0	10.0					
2- 3				6.5		6.0		5.5	3.5	7.0		5.5			7.5	8.0		4.5					
3- 4								5.0		6.0	6.5	3.0			12.0		8.0						
4- 5			4.5	1.0				4.5		5.0	4.0				2.0		2.5	11.5	2.0				
5- 6				5.5		2.5	7.5	3.5	7.5	3.5		5.0	8.0		6.5			6.0	5.5			2.0	
6- 7							7.0	3.0	6.5		6.0				11.0	7.5	9.5				5.5		
7- 8					5.5		6.5	2.5	5.0		3.5	7.0			1.5		4.0						
8- 9				4.0			5.5		4.0			4.5			6.0			7.5					5.5
9-10			4.0				5.0		3.0	6.5	5.0			4.5	10.0		11.0	1.5		2.5			
10-11					2.0		4.5			5.5	2.5	6.0	8.0		0.5	7.0	5.0						
11-12				3.0			3.5	7.5		4.5		3.5			5.0			8.5			2.5		
12-13				7.5		5.0	3.0	7.0	7.0	3.0	4.5			11.5	9.5		12.0	3.0	1.0				1.0
13-14	1.0						2.5	6.5	6.0			5.5					6.5		4.5				
14-15			3.5	2.0				5.5	4.5		6.5	3.0			4.0	7.0	1.0	10.0				2.5	
15-16		2.5		6.5		1.5		5.0	3.5	7.5	4.0		7.5		8.5			4.5					
16-17								4.5		6.0		5.0					8.0						
17-18	4.0			1.0	4.5		7.5	3.5		5.0	6.0				3.5		2.0	11.5					
18-19				5.5			7.0	3.0		4.0	3.0	7.0			7.5	6.5		5.5		4.0			
19-20		6.0	3.0				6.5	2.5	6.5			4.0		2.5	12.0		9.0				5.0		
20-21					1.0		5.5		5.5		5.0		7.5		2.5		3.5						
21-22				4.5			5.0		4.0			6.0			7.0			7.0	3.0				
22-23						4.0	4.5		3.0	7.0	7.0	3.5		9.5	11.5	6.0	10.5	1.5		1.0			
23-24							3.5	7.5		5.5	4.5				1.5		5.0					3.5	
24-25			2.5	3.0			3.0	7.0		4.5		5.5			6.0			8.5			2.0		
25-26				7.5			2.5	6.0	7.0	3.5	6.5	3.0	7.5		10.5		12.0	3.0					
26-27								5.5	6.0		3.5				1.0	6.0	6.5						
27-28				2.0	3.5			5.0	4.5			4.5			5.5		0.5	10.0					
28-29				6.5				4.5	3.5	7.5	5.5				9.5			4.0					
29-30			2.0			7.0	7.5	3.5		6.0	3.0	6.5					7.5		2.0				
30-31				1.0			7.0	3.0		5.0		4.0	7.0		4.5	5.5	2.0	11.0	5.5				

	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	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP
MAX	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	10.0	11.2	11.2	10.1	6.7	8.8	11.7
MIN	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	10.6	11.7	11.7	10.9	9.8	9.8	11.3
DUR	4	5	3	4	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3
TOT																					2		
	(S)									(S)							(S)		(S)				
0- 1			7.0			0.5			5.0	1.0													5.5
1- 2				1.5		5.0		4.5	4.0		9.5		8.5		1.0					3.5			1.5
2- 3			1.0	4.5		10.0			3.0	6.5		1.0		2.5		9.5					6.0	12.5	7.5
3- 4			4.5	8.0					2.0	5.5		9.5	4.5									10.0	3.5
4- 5									1.0	4.5		2.0				3.5			2.0	2.5		8.0	9.5
5- 6				0.5			4.5	7.0	7.5	3.5		10.5	0.5				1.0						5.5
6- 7			2.0	3.5					6.5	2.5	2.5	3.0											1.5
7- 8		3.5	6.0	7.0		4.5			5.5	1.5		11.5			6.0				4.0	1.0	6.0	0.5	7.5
8- 9						9.0		0.5	4.0		11.0				12.0								3.5
9-10								9.5	3.0	7.0		12.5		1.0		9.5		11.5					9.5
10-11	4.5		3.5	2.5					2.0	6.0	0.5												5.5
11-12			7.0	6.0					1.0	5.0						3.5		0.5		11.5			2.0
12-13							10.5	3.0		4.0	9.0		9.5		6.0		1.0				5.5	10.5	8.0
13-14			1.0			4.0		12.0	6.5	3.0					11.5							8.0	4.0
14-15			4.5	2.0		8.5			5.5	2.0								2.5		10.0			10.0
15-16				5.0					4.5	1.0													6.0
16-17							1.5	5.5	3.5	7.5			2.0			9.5						1.0	2.0
17-18			2.0		11.5				2.5	6.5	2.0			4.0	5.5					8.5	5.0		8.0
18-19			6.0	1.0					1.5	5.5					11.5	3.5							4.0
19-20				4.0		3.5				4.0	11.0	1.0		11.5			1.0		12.0				
20-21		3.5		7.0		8.0		8.0	7.0	3.0		10.0								7.5			6.0
21-22			3.5				12.0		6.0	2.0	0.5	2.0							1.0			11.0	2.0
22-23			7.0						5.0	1.0		11.0			5.0						5.0	8.5	8.5
23-24				3.0				1.5	4.0				10.5		11.0	9.5				6.0			4.5
24-25			0.5	6.5				10.5	3.0	6.5	4.0	12.0		2.5					3.5				
25-26			4.5			3.0	3.0		2.0	5.5						3.5						1.5	6.5
26-27						7.5			1.0	4.5	12.5						1.0			5.0			2.5
27-28				2.0	11.0	12.0		4.0	7.5	3.5			3.0		4.5						4.5		8.5
28-29			2.0	5.5					6.5	2.5	2.0				10.5								4.5
29-30			6.0						5.5	1.5										3.5			0.5
30-31									4.5		10.5					9.5						11.0	6.5

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	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	SW CYG	WW CYG
MAX	11.7	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	9.3	9.9
MIN	11.1	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	11.8	13.2
DUR	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	5	5
TOT																						2	
	(S)							(S)		(S)		(S)		(S)				(S)		(S)			
0- 1			3.5			3.0	5.0	2.0	4.0	8.0	7.5	2.5	2.0	4.5	8.5	8.0	7.0			9.0	3.0		
1- 2	6.5	1.0	3.5	11.5	3.0	5.0	4.0	1.0	4.0		3.5	8.5	4.5	2.0				6.0					
2- 3	2.5		3.0		7.0	7.5	2.5	5.5	4.5		9.0	4.0	1.5	4.5			5.5		6.5		5.5		
3- 4	8.5	9.0	2.5	2.5	11.0	9.5	1.5	4.0	5.0		5.0	10.0	4.0	1.5		6.0		5.0		8.5			
4- 5	4.5		2.5			11.5		3.0	5.5	1.5		5.5	1.5	4.0			4.0	8.5			8.0		
5- 6	0.5		2.0			0.5	4.5	1.5	5.5	1.5	6.5		4.0	1.0		10.5	8.0	3.5	6.0				
6- 7	6.5		1.5	8.5		3.0	3.5		6.0	2.0	2.5	7.0	1.0	3.5			2.5	7.5		8.5			
7- 8	2.5		1.5			5.0	2.0	5.0	6.5	2.5	8.0	3.0	3.5	1.0	6.0		6.5				3.5		
8- 9	8.5	1.0	1.0		2.5	7.0	1.0	4.0	7.0	2.5	4.0	9.0	0.5	3.5		8.0		6.0	6.0				
9-10	4.5		0.5		6.5	9.5	5.5	2.5	7.0	3.0	9.5	4.5	3.0				5.0			8.0	6.0		
10-11	0.5	9.5			10.5	11.5	4.0	1.5	7.5	3.5	5.5			3.0		12.5	9.0	4.5					
11-12	7.0					0.5	3.0		8.0	4.0		6.0	3.0			5.5	3.5	8.5	5.5		8.5		
12-13	3.0					2.5	2.0	4.5		4.0	7.0	2.0		2.5			7.5	3.0		8.0			
13-14	9.0					5.0		3.5		4.5	2.5	7.5	2.5	5.0		10.0		7.0	11.5				
14-15	5.0			12.5		7.0	5.0	2.0		5.0	8.5	3.5	5.0	2.5	4.0		6.0		5.5		4.0		
15-16	1.0	1.5			2.0	9.0	4.0	1.0	1.5	5.5	4.0	9.0	2.0	5.0				5.5		7.5			
16-17	7.0				5.5	11.0	2.5	5.5	1.5	5.5		5.0	4.5	2.0		8.0	5.0		11.0		6.5		
17-18	3.0	9.5			9.5		1.5	4.5	2.0	6.0	6.0		2.0	4.5			8.5	4.0	5.0				
18-19	9.0					2.5		3.0	2.5	6.5	1.5	6.5	4.5	1.5		12.0	3.5	8.0		7.5	9.0		
19-20	5.0			9.5		4.5	4.5	2.0	3.0	7.0	7.5	2.5	1.5	4.0		5.5	7.5	2.5	11.0				
20-21	1.0					6.5	3.5		3.0	7.0	3.0	8.0	4.0	1.5				6.5	5.0			7.5	
21-22	7.0			1.0		9.0	2.5	5.0	3.5	7.5	9.0	4.0	1.0	4.0		10.0	6.0			7.0	4.5		12.0
22-23	3.5	2.0			1.0	11.0	1.0	4.0	4.0	8.0	4.5	9.5	3.5	1.0				5.0	10.5				
23-24	9.5				5.0		5.5	2.5	4.5			5.5	1.0	3.5			4.5	9.0	4.5		7.0		
24-25	5.5	10.0		7.0	9.0	2.0	4.5	1.5	4.5		6.0		3.5	0.5	12.5	7.5	8.5	3.5		7.0			
25-26	1.5					4.5	3.0		5.0		2.0	7.0		3.0			3.0	7.5	10.5		9.5		
26-27	7.5					6.5	2.0	4.5	5.5	1.5	8.0	3.0	3.0			12.0	7.0		4.0		2.0		
27-28	3.5					8.5		3.5	6.0	1.5	3.5	8.5		3.0		5.5		6.0		6.5			
28-29	9.5					11.0	5.0	2.5	6.0	2.0	9.5	4.5	2.5				5.5		10.0		5.0		
29-30	5.5	2.0			0.5		4.0	1.0	6.5	2.5	5.0		5.0	2.5		9.5		5.0	4.0			11.0	
30-31	1.5				4.5	2.0	2.5	5.5	7.0	3.0		6.0	2.5	5.0			4.0	8.5		6.5	7.5		

	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	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW 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	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8
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	8.7	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5
DUR	4	4	4	3	4	5	5	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5
TOT																2							1
												(S)		(S)									
0- 1															11.0	10.5						3.5	
1- 2	10.5		6.5					10.0				8.5							11.5		5.0	6.0	
2- 3													9.5									8.5	
3- 4	7.5			10.5	11.0					10.5	10.5									11.0		11.0	
4- 5					10.0										11.0								
5- 6									9.5					11.0					11.0		6.5		
6- 7	11.0																					5.0	
7- 8																						7.5	
8- 9	8.5			12.0				11.0							11.0							10.0	
9-10													10.5				10.0		10.0		8.5	12.0	
10-11				9.5				9.0			9.5									12.5			9.5
11-12	12.0				11.0				10.0	11.0												4.0	
12-13					10.0					8.0		11.5		12.0	10.5						1.5	6.5	
13-14	9.0					12.0												12.0			10.0	9.0	5.0
14-15																						11.0	
15-16				10.5				12.0															
16-17	12.5					8.5							11.5		10.5						3.5		
17-18								10.0	10.0		8.5										12.0	5.5	
18-19	9.5																					8.0	
19-20					11.5					11.5		10.5						11.0				10.0	
20-21				11.5	10.0					8.5					10.5				12.5		5.0		
21-22																				11.5			
22-23				9.0																		4.5	
23-24	10.5								10.5				12.5									6.5	
24-25								11.5							10.5	11.5			11.5		7.0	9.0	10.5
25-26	7.5																					11.5	
26-27		12.0						9.5				9.5											
27-28		11.5		10.5						12.0												3.5	5.5
28-29	11.0	10.5			10.0					9.0	11.5				10.0				11.0		8.5	5.5	
29-30		10.0					12.5		10.5								12.0					8.0	
30-31	8.5	9.5																				10.5	1.0

	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	CO LAC
MAX	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	10.5
MIN	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	11.0
DUR	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5
TOT				1			1			1													
		(S)				(S)										(S)				(S)			
0- 1			8.0			0.5	3.0								6.0	2.0	4.0				12.0	10.5	
1- 2	3.0				3.5				11.5			10.5		2.5	6.0	2.0							
2- 3					2.5				7.5						5.5	1.5		1.5		0.5			
3- 4					2.0			2.5					10.5	3.5	5.5	1.5	6.0	2.5					
4- 5	9.5			3.0	1.0						9.0				5.5	1.5		3.5					
5- 6													5.5	5.0	5.0	1.0	2.0	5.0					10.0
6- 7		0.5	7.5			3.0			9.5						5.0	1.0	7.5	6.0					
7- 8			12.5			2.5				8.5	11.5			6.0	4.5	0.5		7.0					
8- 9						1.5		2.0				9.0			4.5	0.5	4.0	8.0			0.5	11.0	12.0
9-10		7.0				0.5		8.0						7.5	4.5								
10-11					3.5				11.5						4.0					1.0			1.0
11-12					3.0				7.5					8.5	4.0	8.0	5.5						
12-13			7.5		2.0								9.0	1.0	3.5	7.5							
13-14			12.5		1.0			1.5						9.5	3.5	7.5	2.0						3.0
14-15	4.0							7.0						2.0	3.5	7.5	7.5	1.5			11.5		
15-16						3.0			9.5			7.5			3.0	7.0		3.0	0.5				
16-17						2.5				10.0				3.5	3.0	7.0	3.5	4.0				11.5	
17-18	10.5			3.5		1.5									2.5	6.5		5.0					
18-19			7.5			0.5		1.0			7.5			4.5	2.5	6.5		6.0					
19-20		1.5	12.0					6.5	11.5				12.5		2.5	6.5	5.5	7.0					
20-21					3.0		4.0		7.5			12.5		5.5	2.0	6.0		8.0					
21-22					2.0						10.0		7.0		2.0	6.0	1.5						
22-23		8.0			1.0							6.0		7.0	1.5	5.5	7.0						9.0
23-24							1.0								1.5	5.5			1.0				
24-25			7.0			3.5		6.0	9.5		12.0			8.0	1.5	5.5	3.5					12.0	
25-26			12.0			2.5				11.5				0.5	1.0	5.0		1.0					11.0
26-27						1.5								9.5	1.0	5.0		2.0					
27-28	5.0					0.5						11.0		1.5	1.0	4.5	5.0	3.0		1.0			
28-29									11.5				10.5		0.5	4.5		4.0			10.5		
29-30					3.0			5.5	7.5					3.0		4.5	1.5	5.0			12.5		
30-31	11.5		7.0		2.0								5.5			4.0	7.0	6.0					2.0

	CO LAC	Y LEO	UU LEO	UV LEO	VZ LEO	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	V508 OPH	V839 OPH	1010 OPH
MAX	10.5	9.5	11.4	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	10.6	10.8	5.8	10.5	10.1	8.8	6.2
MIN	11.0	12.7	12.7	10.2	11.7	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	10.7	9.4	7.0
DUR	5	5	4	3	4	4	6	7	4	5	5	4	5	5	5	5	4	5	5	5	3	3	4
TOT															1			1					
	(S)													(S)									
0- 1				4.0				12.0															11.5
1- 2				8.5			7.5			8.5								1.5					
2- 3		5.0							10.5			8.0		2.5		1.0			12.0				11.0
3- 4	2.0		9.0	4.0														7.0			7.5	8.5	
4- 5				8.5								12.5				1.5	5.0						11.0
5- 6			1.5			4.0			7.5													9.5	
6- 7				4.0		2.0										2.0							10.5
7- 8		6.5		8.5	1.0			11.5			12.0						3.5						
8- 9			10.0		3.5		12.0		4.5				2.0			3.0							10.0
9-10				4.0	5.5						11.0												
10-11			2.5	8.5	7.5											3.5	2.0						9.5
11-12					10.0		9.0		1.0		9.5												
12-13		8.0		4.0					11.5							4.5		4.5				8.0	9.0
13-14				8.5							8.5				6.5						7.5		
14-15								11.5								5.0						9.5	9.0
15-16	10.0		3.0	4.0					8.5		7.0	10.0	6.0		4.0		5.0						
16-17				9.0		3.5				11.5						5.5							8.5
17-18		9.5				1.5									2.0								
18-19	12.0			4.0					5.5	9.0						6.5	3.0						8.0
19-20		1.5		9.0	1.0															7.5			
20-21	1.0		4.0		3.0									1.0									7.5
21-22				4.0	5.0		10.5	11.0	2.5								1.5	2.0		9.0		8.0	
22-23		10.5		9.0	7.5																		
23-24	3.0				9.5												6.5	7.5		10.5	7.5	9.5	
24-25		3.0		4.0			7.5												7.5				
25-26			5.0	9.0					9.5											12.0			
26-27												7.0					4.5						
27-28				4.0		3.5								5.0									
28-29				9.0		1.5		10.5	6.5			11.5											
29-30		4.5															3.0		8.0				
30-31			6.0	4.0																		8.0	

	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI	GU ORI	GU ORI	GP PEG	Z PER	RT PER	ST PER	XZ PER	BETA PER	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER
MAX	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	10.2	9.9	10.6	9.7	10.6	2.2	9.7	9.7	6.4	6.4	12.3	10.6	11.1
MIN	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	11.0	12.4	12.0	13.2	12.7	3.5	10.6	10.3	9.1	7.6	13.3	12.1	11.7
DUR	4	3	3	5	3	4	3	3	4	4	4	6	4	5	4	8	4	4	6	5	4	4	4
TOT												2		1					2				
			(S)					(S)		(S)								(S)					
0- 1				2.0			1.0	5.5	4.0													10.5	9.5
1- 2		1.0		1.0			5.5	1.0	2.5								4.0				11.5	8.0	10.0
2- 3			2.5				1.0	5.5	1.0	6.5			5.0		4.0	1.0						5.0	11.0
3- 4		4.0					5.5	1.0		5.5			1.5					4.0					11.5
4- 5							1.0	5.5		4.0													
5- 6	3.5		1.5				5.5	1.0		2.5				3.5			3.5		9.5	11.5	10.0		
6- 7		3.0					1.0	5.5	6.5	1.0													
7- 8			4.5				5.5	1.0	5.5									3.0				11.5	
8- 9			1.0				1.0	5.5	4.0				3.5									8.5	
9-10		2.0				1.5	5.5	1.0	2.5						1.5		3.0					5.5	
10-11			3.5				1.0	5.5	1.0	6.5					5.5						12.0		4.5
11-12							5.5	1.0		5.5								2.5					5.5
12-13	3.5	1.5			2.5	5.0	1.0	5.5		4.0													6.0
13-14			3.0				5.5	1.0		2.5			6.0	2.5			2.5						7.0
14-15		4.0					1.0	5.5	6.5	1.0			2.5					7.0			10.5	12.5	8.0
15-16		0.5			5.0		5.5	1.0	5.5									2.0				9.5	8.5
16-17			2.0				1.0	5.5	4.0								6.5					6.5	9.5
17-18		3.5		5.0			5.5	1.0	2.5						3.0		1.5						10.0
18-19				3.5			1.0	5.5	1.0	7.0					7.0			6.5		11.5			11.0
19-20	3.0		1.0	2.5			5.5	1.0		5.5			4.5					1.5			12.0		11.5
20-21		2.5		1.0			1.0	5.5		4.0			1.0				6.0						
21-22			4.0				5.5	1.0		2.5				1.0			1.0						
22-23							1.0	5.5	7.0	1.0						2.5		5.5				10.5	
23-24		1.5					5.5	1.0	5.5									0.5			10.5	7.5	
24-25			3.0				1.0	5.5	4.0						1.0		5.5						
25-26		4.5					5.5	1.0	2.5		12.0		3.5		4.5		0.5						
26-27	2.5	0.5			1.5		1.0	5.5	1.0	7.0	11.5							5.0					4.5
27-28			2.0				5.5	1.0		5.5											9.5		5.5
28-29		3.5					1.0	5.5		4.0							4.5				12.5		6.0
29-30					4.0		5.5	1.0		2.5		1.0										11.0	7.0
30-31			1.0				1.0	5.5	7.0	1.0			5.5					4.5				8.0	7.5

	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC 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	11.1	8.0	10.5	11.5	11.5	10.5	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	11.7	12.5	11.2	12.0	11.7	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	11.4	13.5	9.4
DUR	4	4	3	2	4	6	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	4
TOT		1																					
	(S)							(S)					(S)			(S)							
0- 1					5.0		3.0		1.5		3.5	2.5	6.5		1.0	5.0	0.5	8.0	5.5	2.5	11.0	4.5	
1- 2		3.0	2.0				3.5					2.5	6.5		2.5	6.5	5.0	0.5	11.0		12.0		5.0
2- 3	4.5				6.5		4.0					2.5	6.5	3.5	4.0	8.0	9.0	9.5		9.5	1.0	10.0	12.0
3- 4	5.5		3.5				5.0	0.5			4.0	2.5	6.5		5.5	1.0	4.0	2.0			2.0	7.5	3.5
4- 5	6.5							1.5				2.5	6.5		7.0	2.5	8.5	11.0			3.0	5.0	10.0
5- 6	7.0		5.5		1.0			2.0				2.5	6.5	5.0	8.5	4.0	3.0	3.5	3.0		4.5		1.5
6- 7	8.0		1.5					2.5				2.5	6.5		1.5	6.0	7.5		8.5		5.5	10.5	8.5
7- 8	8.5				3.0	1.5		3.0	2.0			2.5	6.5		3.0	7.5	2.5	5.0			7.0	8.0	
8- 9	9.5		3.5					3.5				2.5	6.5	6.5	4.5		6.5				8.0	5.0	6.5
9-10	10.0				5.0	2.5		4.0				2.5	6.5		6.0	2.0	1.5	6.5		7.0	9.0		
10-11	11.0		5.0				0.5	5.0		3.0		2.5	6.5		7.5	3.5	6.0				10.5		5.0
11-12	11.5		1.0	2.0	7.0	3.5	1.0			2.5		2.5	6.5	8.0	0.5	5.0	1.0	8.0	5.5		11.5	8.0	12.0
12-13		5.0		4.0			2.0			1.5		2.5	6.5		2.0	6.5	5.0	0.5	11.0			5.5	3.5
13-14			3.0			4.5	2.5			1.0		2.5	6.5		3.5	8.0		9.5			1.5		10.0
14-15					1.5		3.0		2.5			2.5	6.5	9.5	5.0	1.0	4.5	2.0			2.5		1.5
15-16			5.0				3.5					2.5	7.0		7.0	2.5	8.5	11.0			4.0	8.5	8.5
16-17			1.0		3.0		4.0					3.0	7.0		8.5	4.0	3.5	3.5	3.0	4.5	5.0	6.0	
17-18							4.5	0.5	0.5			3.0	7.0	11.0	1.5	5.5	8.0	12.5	8.5		6.0		6.5
18-19	4.5		3.0		5.0			1.0				3.0	7.0		3.0	7.0	2.5	5.0		11.5	7.5		
19-20	5.5							2.0				3.0	7.0		4.5		7.0				8.5	9.0	5.0
20-21	6.0		4.5		7.0			2.5				3.0	7.0	12.5	6.0	1.5	2.0	6.5			10.0	6.5	12.0
21-22	7.0		0.5					3.0	3.0			3.0	7.0		7.5	3.0	6.5				11.0		3.0
22-23	7.5							3.5				3.0	7.0		0.5	4.5	1.0	8.0	5.5		12.0		10.0
23-24	8.5		2.5		1.5			4.0				3.0	7.0		2.0	6.0	5.5	0.5	11.0	2.0	0.5	9.0	1.5
24-25	9.5						0.5	4.5	1.0			3.0	7.0		3.5	7.5		9.5			2.0	6.5	8.5
25-26	10.0		4.5	2.0	3.5		1.0				0.5	3.0	7.0		5.0	1.0	4.5	2.0		9.5	3.0		
26-27	11.0	1.0		4.0			1.5					3.0	7.0		6.5	2.5	9.0	11.0			4.5		6.5
27-28	11.5				5.5		2.5					3.0	7.0		8.0	4.0	4.0	3.5	3.0		5.5	9.5	
28-29	12.5		2.0				3.0				1.0	3.0	7.0		1.0	5.5	8.0	12.5	8.5		6.5	7.0	5.0
29-30					7.0		3.5					3.0	7.0		2.5	7.0	3.0	5.0			8.0	4.5	11.5
30-31			4.0				4.0					3.0	7.0		4.0	8.5	7.5				9.0		3.0

	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	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	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	12.5	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	5	4	5	4	3	3	3	4
TOT		(S)			(S)		(S)											
0- 1	1.5	6.5		3.0	7.5	4.0	8.0											
1- 2	7.0	2.0	6.5	4.5		5.0										10.0		9.0
2- 3	2.5	7.5	11.0	6.0		6.5			9.5						11.0		10.0	
3- 4	7.5	3.0		7.5	3.5	7.5	3.5	9.5					11.0		10.0			10.0
4- 5	3.5	8.0			5.0		4.5	5.0							9.0			
5- 6	8.5	3.5			6.5		5.5											11.0
6- 7	4.0	9.0		3.5	7.5		7.0										10.0	
7- 8	9.5	4.5	5.5	5.0		4.0	8.0	11.5		9.0								12.5
8- 9	5.0		10.0	6.5		5.0		7.0			9.0							
9-10		5.5		8.0	3.5	6.0										9.5		
10-11	6.0				5.0	7.5					9.5						9.5	
11-12	1.5	6.5			6.5		4.5			10.0		11.0						
12-13	7.0	2.0		4.0	8.0		5.5	9.0			10.0				11.0			
13-14	2.5	7.5		5.5			6.5	5.0							10.0			
14-15	8.0	3.0	9.5	7.0		3.5	8.0				11.0				8.5			
15-16	3.5	8.5		8.5	4.0	5.0				10.5							12.5	
16-17	8.5	4.0			5.5	6.0		11.0			11.5							10.0
17-18	4.5	9.0			7.0	7.0		7.0					10.0			9.0		
18-19	9.5	4.5		4.5		8.5	4.0				12.0							11.0
19-20	5.0			6.0			5.5			11.5							12.0	
20-21		5.5	8.5	7.5	3.0		6.5						12.5					12.0
21-22	6.0				4.5	3.5	7.5	9.0										
22-23	1.5	6.5			6.0	4.5		4.5							11.0			
23-24	7.0	2.0		3.5	7.5	6.0				12.0					9.5		11.5	
24-25	2.5	7.5		5.0		7.0			12.0						8.5			
25-26	8.0	3.0		6.5		8.0	4.0	11.0								9.0		
26-27	3.5	8.5	8.0	8.0	3.5		5.0	6.5								12.5		
27-28	9.0	4.0	12.5		5.0		6.5										11.0	
28-29	4.5	9.0			6.5	3.5	7.5											
29-30	9.5	5.0		3.5	8.0	4.5			9.5					12.0				9.5
30-31	5.5			5.0		5.5		8.5										

AAVSO Eclipsing Binary Ephemeris for April 2020 all times in U.T.
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	RT AND	TW AND	UU AND	WZ AND	XZ AND	AD AND	BD AND	BX AND	DS AND	CX AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	WW AUR	WW AUR	AP AUR	AP AUR	AR AUR
MAX	9.3	8.8	11.2	11.6	10.0	11.1	11.3	8.6	10.8	10.7	9.3	9.2	9.2	9.0	10.6	9.0	10.1	10.1	5.7	5.7	10.9	10.9	6.0
MIN	10.2	11.0	14.1	12.6	13.0	11.6	11.7	9.5	11.4	12.0	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1	6.4	6.4	11.4	11.4	6.7
DUR	3	11	8	4	3	4	3	4	4	3	7	3	3	7	4	4	3	3	5	5	4	4	5
TOT		2												3									
													(S)					(S)		(S)		(S)	
0- 1										12.0			8.0			9.0		1.0	2.5		4.0		
1- 2	8.0												8.5			11.5	1.5				7.0		
2- 3													9.0									3.5	
3- 4					2.0								9.0		9.0							7.0	
4- 5	11.5		11.5				10.0						9.5	10.0							3.5		
5- 6							8.5						9.5						4.0		7.0		
6- 7	9.0			11.0									10.0									3.5	
7- 8			11.0										10.5									6.5	
8- 9								2.0					10.5								3.0		
9-10													11.0								6.5		
10-11							10.5						11.5			8.0			5.0			3.0	
11-12	9.5						8.5						11.5			10.5						6.5	
12-13											10.0										3.0		
13-14		11.0																			6.0		
14-15															10.5		1.0					2.5	
15-16																						6.0	3.0
16-17	10.5						11.0					7.0			7.0						2.5		
17-18							9.0					7.5									6.0		
18-19	7.5						7.5					8.0										2.5	
19-20								1.5				8.0								1.0		5.5	
20-21												8.5									2.0		
21-22	11.0											9.0		9.0		9.5					5.5		
22-23				11.0	2.0							9.0										2.0	
23-24	8.5					11.5	9.5					9.5										5.5	
24-25						11.5	8.0					10.0								2.5	2.0		
25-26						11.0			11.5			10.0									5.0		
26-27						10.5						10.5										1.5	
27-28						10.5					9.5	11.0			8.5							5.0	
28-29	9.0					10.0						11.0						1.0			1.5		
29-30						9.5	10.0					11.5								3.5	4.5		

	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	TU CMA	TZ CMA	TZ CMA
MAX	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	9.7	9.8	9.8
MIN	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	10.7	10.5	10.5
DUR	5	4	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	4	5	4	4	4	4
TOT	(S)				(S)		(S)		(S)		(S)	(S)					(S)						(S)
0- 1			5.5			6.0	2.5		4.0	5.0	1.5			9.0			5.5		2.5				
1- 2					3.0	5.5	1.5	6.5	2.5	2.5	6.0		7.5			9.0							
2- 3						5.0	1.0	5.5	1.5	7.0	3.5			3.5		3.5							3.0
3- 4		1.0	4.5			4.5		4.0		4.5				8.0	5.0		7.0						
4- 5						3.5	7.5	3.0	7.0	1.5	5.5	7.0				10.5	1.0						
5- 6						3.0	7.0	2.0	5.5	6.0	2.5			3.0		4.5							
6- 7			3.5	2.5		2.5	6.0		4.5	3.5				7.0			8.0			2.0			
7- 8						1.5	5.5	7.0	3.5	1.0	4.5			11.5	4.5	11.5	2.5	4.0					
8- 9						1.0	5.0	6.0	2.0	5.5	2.0			2.0		6.0							
9-10			2.0				4.0	5.0	1.0	3.0	6.5	7.0		6.5			9.5				1.5		
10-11						7.5	3.5	3.5	7.5		4.0			11.0			4.0						
11-12					2.0	7.0	3.0	2.5	6.5	5.0	1.5		5.5	1.0	4.5	7.5							
12-13			1.0			6.0	2.5	1.5	5.0	2.5	6.0			5.5		2.0	11.0						
13-14	1.0		5.5			5.5	1.5		4.0	7.0	3.0			10.0			5.5						
14-15						5.0	1.0	6.5	3.0	4.0		6.5				9.0							
15-16						4.0		5.5	1.5	1.5	5.0			4.5	4.0	3.0		3.0					
16-17			4.5	1.5		3.5	7.5	4.5		6.0	2.5			9.0			6.5						
17-18	4.5					3.0	7.0	3.0	7.0	3.5	7.0					10.0	1.0						
18-19					5.0	2.5	6.0	2.0	5.5		4.5			4.0		4.5					2.0		
19-20			3.5			1.5	5.5		4.5	5.5	2.0	6.5		8.5	3.5		8.0			2.0			
20-21						1.0	5.0	7.0	3.5	3.0	6.5				11.5	11.5	2.5						
21-22					1.0		4.0	6.0	2.0		4.0		3.5	3.0		6.0							
22-23			2.0			7.5	3.5	5.0	1.0	4.5	1.0			7.5			9.5		2.0				
23-24				4.5		7.0	3.0	3.5	7.5	2.0	5.5				3.5		3.5	2.0				2.5	
24-25		5.0				6.0	2.5	2.5	6.5	6.5	3.0	6.0	11.0	2.0	11.0	7.0							
25-26			1.0			5.5	1.5	1.5	5.0	4.0				6.5		1.5	10.5						1.5
26-27			5.5			5.0	1.0		4.0	1.5	5.0			11.0			5.0						
27-28						4.0		6.5	3.0	6.0	2.5			1.5	3.0	8.5					2.5		
28-29					4.0	3.5	7.5	5.5	1.5	3.5	7.0			6.0	11.0	3.0							
29-30		4.5	4.5			3.0	7.0	4.5			4.5	6.0		10.5			6.5						

	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	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP
MAX	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	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7
MIN	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	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1
DUR	5	3	4	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3	3
TOT																				2			
									(S)							(S)		(S)					(S)
0- 1			1.5		2.5		6.5	3.0	7.0		7.5		1.5			7.0	2.0				9.0	2.5	7.5
1- 2		3.0	4.5		7.0	9.0		2.0	6.0					4.0					2.5	4.0	6.5	8.5	3.5
2- 3	3.5				11.5			1.0	5.0		8.5		9.0	10.0		1.0		9.5				4.5	10.0
3- 4									4.0	8.5													6.0
4- 5							9.0	6.5	3.0		9.5								1.0			7.0	2.0
5- 6		4.5	3.5					5.5	2.0			8.0						11.5				3.0	8.0
6- 7				10.0	1.5			4.5			10.5			4.0	9.5					4.0		9.0	4.0
7- 8					6.5		2.5	3.5	7.5					9.5		7.5						5.0	10.0
8- 9		2.0			11.0		11.0	2.5	6.5	1.5	11.5								11.0		11.5	1.0	6.0
9-10		5.5	2.5					1.5	5.5							1.5					9.0	7.0	2.0
10-11			5.5			10.5			4.5	10.0			11.5								6.5	3.0	8.0
11-12							5.0	7.0	3.0					3.5					10.0	3.5		9.0	4.0
12-13		3.0			1.0			6.0	2.0					9.5			10.0					5.0	
13-14			1.5		6.0			5.0	1.0						9.5							1.0	6.0
14-15			5.0		10.5	1.5		4.0		8.5						7.5			8.5			7.5	2.5
15-16	3.5						7.5	3.0	6.5													3.5	8.5
16-17		4.5		9.0				2.0	5.5			9.0		3.0		1.5				3.0		9.5	4.5
17-18									4.5	11.5	7.5		10.5	9.0			1.5		7.5			5.5	
18-19			4.0					7.5	3.5												9.5	1.5	6.5
19-20		2.0			5.5		9.5	6.5	2.5	1.5	8.5										7.0	7.5	2.5
20-21		5.5			10.0			5.5	1.5			1.5			9.5				6.0			3.5	8.5
21-22						7.5		4.5		10.0	9.5			2.5		7.5				3.0		9.5	4.5
22-23			3.0				3.5	3.0	7.0				2.0	8.5				11.0				5.5	
23-24		3.0				3.0		2.0	6.0		10.5					1.5			5.0			1.5	6.5
24-25								1.0	5.0				9.5									7.5	2.5
25-26					4.5				4.0	8.0	11.5											4.0	9.0
26-27			2.0		9.5		5.5	6.5	3.0					2.0					3.5	2.5		10.0	5.0
27-28		4.5	5.0					5.5	2.0			10.5		8.0	9.5			2.0			10.0	6.0	
28-29	3.5							4.5		11.5						7.5					7.5	2.0	7.0
29-30								3.5	7.5			6.5					9.5		2.0			8.0	3.0

	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	SW CYG	WW CYG	ZZ 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	9.3	9.9	10.7
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	11.8	13.2	12.0
DUR	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	5	5	4
TOT																					2		
							(S)		(S)		(S)		(S)				(S)		(S)				
0- 1	10.0			8.5	4.0	1.5	4.5	7.0	3.0	6.5	1.5	5.0	2.0	10.0		8.0	3.5					11.0	
1- 2			11.0		6.5		3.0	7.5	3.5	2.5	7.5	2.0	4.5		7.5	2.5	7.5	3.5					5.5
2- 3					8.5	5.0	2.0	8.0	4.0	8.0	3.0	4.5	2.0			6.5	2.0		6.0	2.5			
3- 4					10.5	3.5			4.5	4.0	9.0	1.5	4.5		11.5	1.0	6.0						
4- 5						2.5	5.0		4.5	9.5	5.0	4.0	1.5		5.0	5.0		3.5		5.5			9.0
5- 6	2.5				2.0	1.0	4.0	1.0	5.0	5.5		1.5	4.0			9.0	4.5		6.0				
6- 7			8.0	3.5	4.0	5.5	3.0	1.5	5.5	1.5	6.5	4.0	1.0		9.5	3.5	8.5	9.0		8.0			6.5
7- 8	10.5			7.5	6.0	4.5	1.5	1.5	6.0	7.0	2.0	1.0	3.5	8.0	3.0	7.5	3.0	3.0					
8- 9				11.5	8.0	3.0		2.0	6.0	3.0	8.0	3.5				2.5	7.0		5.5				
9-10					10.5	2.0	5.0	2.5	6.5	8.5	3.5		3.5		7.0	6.0	1.5	9.0		3.0			9.5
10-11							3.5	3.0	7.0	4.5	9.5	3.0					5.5	3.0				10.0	
11-12			5.5		1.5	5.0	2.5	3.0	7.5		5.0		3.0		11.5	5.0			5.5	6.0			7.0
12-13	2.5				3.5	4.0	1.0	3.5	7.5	6.0	1.0	3.0			5.0	8.5	4.0	8.5					
13-14				3.0	6.0	3.0	5.5	4.0	8.0	2.0	6.5		2.5			3.5	8.0	2.5		8.5			
14-15	10.5			7.0	8.0	1.5	4.5	4.5		7.5	2.5	2.5	5.0	5.5	9.0	7.5	2.5		5.0	1.0			10.5
15-16				11.0	10.0		3.0	4.5		3.5	8.5	5.0	2.5		2.5	2.0	6.5	8.5					
16-17		11.5				5.0	2.0	5.0	1.0	9.0	4.0	2.0	5.0			6.0	1.0	2.5		3.5			7.5
17-18		11.0			1.5	3.5		5.5	1.5	5.0	10.0	4.5	2.0		7.0		5.0		4.5				
18-19		11.0			3.5	2.5	5.5	6.0	2.0		5.5	2.0	4.5			4.5	9.0	8.0		6.0			
19-20	3.0	10.5	9.0		5.5	1.0	4.0	6.0	2.0	6.5	1.5	4.5	1.5		11.0	8.5	3.5	2.0					11.0
20-21		10.0		2.5	7.5		3.0	6.5	2.5	2.0	7.0	1.5	4.0		4.5	3.0	7.5		4.5			8.5	
21-22	11.0	10.0		6.0	10.0	4.5	1.5	7.0	3.0	8.0	3.0	4.0	1.5	3.0		7.0	2.5	8.0		1.5	7.5		8.5
22-23		9.5		10.0		3.5		7.5	3.5	4.0	8.5	1.0	4.0		9.0	1.5	6.0	2.0					
23-24		9.0			1.0	2.0	5.0	7.5	3.5	9.5	4.5	3.5	1.0		2.5	5.5			4.0	4.0			5.5
24-25		8.5	6.5		3.0		3.5	8.0	4.0	5.5			3.5				5.0	7.5					
25-26		8.5			5.5	5.5	2.5		4.5	1.0	6.0	3.5			6.5	4.0	9.0	1.5		6.5			
26-27	3.0	8.0			7.5	4.0	1.0		4.5	7.0	2.0		3.0			8.0	3.5		4.0				9.0
27-28		7.5		1.5	9.5	3.0		1.0	5.0	2.5	7.5	3.0			11.0	2.5	7.5	7.5					
28-29	11.5	7.5		5.5		1.5	4.5	1.5	5.5	8.5	3.5		3.0		4.5	6.5	2.0			2.0			6.5
29-30		7.0		9.5			3.5	2.0	6.0	4.0	9.0	2.5				1.0	6.0		3.5				

AAVSO Eclipsing Binary Ephemeris for April 2020 all times in U.T.
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	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 CYG	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW DRA	UZ DRA
MAX	11.8	9.4	11.0	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8	9.9
MIN	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	8.7	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7
DUR	4	4	3	4	5	5	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5
TOT															2							1	
											(S)		(S)										
0- 1	8.5									6.5			6.5	6.5			9.0			1.5			
1- 2	8.0		11.5			6.0								10.0		9.0		10.0	10.5	10.5	2.5		
2- 3		6.0			9.0		10.5				8.5										4.5		
3- 4			9.0																		7.0		
4- 5							8.5	11.0		10.5		6.0		6.5						3.5	9.5		
5- 6				10.0				7.5	9.5					10.0				9.0	8.5				
6- 7		6.0		8.5					7.0												1.5		
7- 8													7.5								3.5	11.0	
8- 9			10.0											6.5						5.0	6.0		
9-10						11.5	11.5				7.5			10.0				8.5			8.5		6.5
10-11		6.0	7.5					11.5													11.0	6.5	
11-12							10.0	8.0		9.5		7.0											
12-13														6.5					10.0	7.0	2.5		
13-14			11.5	10.0			8.0		10.0					9.5			11.5	7.5			5.0	2.0	
14-15		6.0		8.5					7.5				8.5								7.5		
15-16			9.0																		10.0		
16-17								11.5			6.5							11.5		8.5			
17-18								8.5						9.5							1.5		
18-19		6.0					11.0			8.5		8.0									4.0		
19-20					10.0												10.5		11.0	2.0	6.5		1.0
20-21			10.0			11.0	9.0				11.0							11.0		10.5	9.0		
21-22				10.0					10.5				9.5	9.5		11.5					11.5		
22-23		6.0	7.5	8.5	6.0		7.0		8.0						7.5								7.5
23-24								8.5											9.0	3.5	3.0		
24-25																8.5		10.0			5.5	7.5	
25-26			11.0							7.5		9.0		9.5			9.0				8.0		
26-27		5.5																			10.5		
27-28			8.5				10.0				10.0									5.5		2.5	
28-29	11.0												10.5					9.0			2.0		
29-30	10.5			10.0			8.5	9.0	11.0					9.0							4.5		

	UZ DRA	AI DRA	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	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	UV LEO
MAX	9.9	7.2	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	10.9	8.5	10.5	10.5	9.5	11.4	9.5
MIN	10.7	8.2	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	12.3	9.5	11.0	11.0	12.7	12.7	10.2
DUR	5	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	4	4	5	5	5	4	3
TOT					1			1															
	(S)			(S)										(S)						(S)			
0- 1			1.0									4.0		4.0									9.0
1- 2	2.5							7.0	6.0					3.5	3.0					9.0			
2- 3							9.5					5.5		3.5									4.0
3- 4						4.5	5.0			9.0				3.5							6.0		9.0
4- 5	9.0	2.0		1.5					8.5			6.5	7.0	3.0	5.0					11.0		7.0	
5- 6		7.0											7.0	3.0					6.5				4.0
6- 7		11.5					11.5				9.0	8.0	6.5	3.0	1.0			8.0					9.0
7- 8							7.5		11.0				6.5	2.5		2.0							
8- 9						4.0					4.0		6.5	2.5		3.0			8.5		7.5		4.0
9-10			1.0									1.5	6.0	2.0	3.0	4.0						8.0	9.0
10-11		2.0						8.5		7.5			6.0	2.0		5.0							
11-12		7.0					9.5					2.5	5.5	2.0		6.0	10.0		10.5				4.0
12-13		11.5			2.5		5.0						5.5	1.5	4.5		11.5						9.0
13-14						3.5						4.0	5.5	1.5							8.5		
14-15	3.5												5.0	1.0	1.0			8.5					4.0
15-16							11.5				7.5	5.0	5.0	1.0						6.5	1.0		9.0
16-17		2.0					7.0						5.0									1.0	
17-18	10.0	6.5						3.5		6.0		6.0	4.5		3.0								4.0
18-19		11.5	1.0			3.0			7.0				4.5			1.0				8.5			9.0
19-20								10.0				7.5	4.0			2.0							
20-21							9.5						4.0		4.5	3.0					2.5		4.0
21-22							5.0		9.5				4.0			4.0				10.5		2.0	9.0
22-23		1.5								11.0	11.0	1.0	3.5			5.0		9.0					
23-24		6.5				2.0							3.5		6.5	6.0							4.0
24-25		11.5					11.5		11.5	4.5	5.5	2.0	3.0										9.0
25-26							7.0						3.0	7.0	2.5		9.0		7.5		4.0		
26-27								5.5				3.5	3.0	7.0			11.0					3.0	4.0
27-28	5.0		1.5										2.5	6.5									9.0
28-29		1.5				1.5		11.5				4.5	2.5	6.5	4.5				9.5				
29-30		6.5					9.5			9.5			2.0	6.0									4.0

	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	EQ ORI	ER ORI	ER ORI
MAX	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	10.3	9.5	9.5
MIN	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	13.3	10.2	10.2
DUR	4	6	4	4	6	7	4	5	5	4	5	5	5	4	5	5	5	3	3	4	4	3	3
TOT													1		1								
												(S)											(S)
0- 1							3.5											6.0				2.5	
1- 2	3.0													1.5	5.0			6.5	9.0	5.5			
2- 3	5.0										4.0							7.5			2.0		
3- 4	7.0				9.5											9.0						2.0	
4- 5						10.0		9.5											6.0				
5- 6													3.0										
6- 7					6.5			7.0		4.5				4.5					7.0				
7- 8							7.5						1.0										2.5
8- 9				1.0						9.0						9.5			8.0				
9-10														2.5				5.0			2.0		
10-11							4.5								3.0			6.0	9.0	11.5			1.5
11-12						9.5												6.5					
12-13														1.0				7.5		11.5			
13-14	2.5				11.0		1.5									10.5			6.0				
14-15	4.5											3.0								11.0		2.0	
15-16	7.0								11.5										7.0				
16-17					8.0															10.5	1.5		
17-18							8.5		10.5					4.0			5.0		8.0			1.0	
18-19						9.0										11.0				10.0			2.5
19-20					5.0				9.0	6.0							6.5	5.0	9.0				
20-21							5.5				2.5			2.5				6.0		10.0			
21-22								10.0	8.0	10.5					6.0		8.0	6.5					1.5
22-23		1.5																7.5	6.0	9.5			
23-24							2.5	7.5	6.5								9.5				1.0		
24-25													4.5						7.0	9.0			
25-26	2.5	2.0				8.5			5.5								11.0					2.0	
26-27	4.5				9.5								2.5						8.0	8.5			
27-28	6.5								4.0														
28-29		2.5												4.0					9.0	8.5		1.5	
29-30			2.0	2.0	6.5													5.0					

	ET ORI	FL ORI	FT ORI	GU ORI	GU ORI	TY PEG	AQ PEG	DI PEG	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
MAX	11.2	10.5	9.1	12.6	12.6	10.5	10.3	9.6	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
MIN	12.4	13.2	9.7	13.5	13.5	12.6	13.0	10.8	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
DUR	5	3	4	4	4	6	12	2	6	4	8	5	4	8	7	4	4	6	5	4	4	4	4
TOT							4		2			1						2					
					(S)												(S)						(S)
0- 1			3.0					11.5		2.0										8.0	5.5	8.5	
1- 2				4.0					2.5				2.5			4.0		10.5		11.0		9.5	3.0
2- 3				2.5																		10.0	4.0
3- 4				1.0													4.0					11.0	4.5
4- 5																						11.5	5.5
5- 6					4.0			11.0								3.5				9.5			6.0
6- 7					2.5														10.0		9.0		7.0
7- 8	3.0				1.0												3.0				6.0		7.5
8- 9	1.5					11.5															3.5		8.5
9-10				4.0									4.0			3.0				8.5		3.0	9.0
10-11				2.5				10.5							11.0					11.5		4.0	10.0
11-12				1.0						3.0							2.5					4.5	11.0
12-13																						5.5	11.5
13-14					4.0											2.5					10.0	6.0	
14-15					2.5									1.0						10.0	7.0	7.0	
15-16					1.0												2.0				4.0	7.5	
16-17													2.0									8.5	
17-18				4.0						1.5						1.5						9.0	3.0
18-19				2.5														8.0		8.5		10.0	4.0
19-20				1.0													1.5		10.0	11.5		10.5	4.5
20-21																					10.5	11.5	5.5
21-22					4.0		9.0									1.0					8.0		6.0
22-23			4.0		2.5					4.0											5.0		7.0
23-24					1.5															10.0			7.5
24-25													3.0										8.5
25-26				4.0																		3.0	9.0
26-27		2.0		2.5																		3.5	10.0
27-28	2.0			1.5							3.5	3.0								9.0	11.5	4.5	10.5
28-29	1.0									2.5						4.5		11.5			8.5	5.5	11.5
29-30					4.0						3.0										6.0	6.0	

	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	RU UMI	VV VIR	AG VIR
MAX	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	10.7	11.7	8.8
MIN	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	11.4	13.5	9.4
DUR	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	4
TOT	1																						
								(S)					(S)			(S)							
0- 1											1.5	3.0	7.0		5.5	1.5	2.5	6.5			10.5	10.0	10.0
1- 2				1.5				1.0				3.0	7.0		7.0	3.0	6.5			7.0	11.5	7.5	1.5
2- 3		2.0						1.5				3.0	7.0			4.5	1.5	8.0	5.5			5.0	8.5
3- 4				3.5		1.5		2.0			1.5	3.0	7.0		2.0	6.0	6.0				1.5		
4- 5								3.0				3.0	7.0		3.5	7.5		9.5			2.5	10.5	6.5
5- 6						2.5						3.0	7.0		5.0		5.0	2.0			3.5	8.0	
6- 7	3.0										2.0	3.0	7.0		6.5	2.0	9.5	11.0			5.0	5.0	5.0
7- 8		1.5				3.5						3.0	7.0		8.0	3.5	4.0	3.5	3.0		6.0	2.5	
8- 9			2.5				1.0					3.5	7.5			5.0	8.5		8.5	4.5	7.5	10.5	3.0
9-10		3.5				4.5	1.5					3.5	7.5		2.5	6.5	3.5	5.0			8.5	8.0	10.0
10-11				2.0			2.0					3.5	7.5		4.0	8.0	7.5			11.5	9.5	5.5	1.5
11-12							3.0					3.5	7.5		5.5	1.0	2.5	6.5			11.0	3.0	8.0
12-13		1.5		3.5								3.5	7.5		7.0	2.5	7.0						
13-14												3.5	7.5			4.5	2.0	8.0	5.5			8.5	6.5
14-15		3.0										3.5	7.5		1.5	6.0	6.0				2.0	6.0	
15-16								1.0				3.5	7.5		3.0	7.5	1.0	9.5		2.0	3.0	3.5	4.5
16-17								1.5		1.0		3.5	7.5		4.5		5.5	2.0			4.5		
17-18		1.0						2.0	1.0			3.5	7.5	2.0	6.0	2.0		11.0		9.0	5.5	9.0	3.0
18-19								2.5				3.5	7.5		7.5	3.5	4.5	3.5	3.0		6.5	6.5	10.0
19-20		3.0		2.0								3.5	7.5			5.0	9.0		8.5		8.0	3.5	1.5
20-21												3.5	7.5	3.5	2.0	6.5	3.5	5.0			9.0		8.0
21-22				4.0								3.5	7.5		3.5	8.0	8.0				10.0	9.0	
22-23			2.5									3.5	7.5		5.5	1.0	3.0	6.5			11.5	6.5	6.5
23-24					1.5		1.5					3.5	7.5	5.0	7.0	2.5	7.0					4.0	
24-25		2.5					2.0					3.5	7.5		8.5	4.0	2.0	8.0	5.5	6.5	1.0		4.5
25-26					2.5		2.5					3.5	7.5		1.5	5.5	6.5				2.5	9.5	
26-27												3.5	7.5	6.5	3.0	7.0	1.5	9.5			3.5	7.0	3.0
27-28												3.5	7.5		4.5		5.5	2.0			5.0	4.5	10.0
28-29				2.0								3.5	7.5		6.0	1.5		11.0			6.0		1.0
29-30		2.5										3.5	7.5	8.0	7.5	3.0	5.0	3.5	3.0		7.0	10.0	8.0

AAVSO Eclipsing Binary Ephemeris for May 2020 all times in U.T.
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	RT AND	TW AND	WZ AND	XZ 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	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR
MAX	9.3	8.8	11.6	10.0	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	5.7	10.9	10.9	6.0	6.0	11.7
MIN	10.2	11.0	12.6	13.0	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	6.4	11.4	11.4	6.7	6.7	13.2
DUR	3	11	4	3	3	4	3	4	5	3	3	7	3	3	7	4	4	5	4	4	5	5	4
TOT		2													3								
					(S)									(S)						(S)		(S)	
0- 1	6.5					9.5	8.0							5.5			6.0						
1- 2						9.0	6.5							6.0			8.5			4.5			
2- 3						8.5								6.5			11.0						
3- 4	10.0					8.5			11.0					6.5					4.5				
4- 5						8.0				9.5				7.0									
5- 6	7.0					7.5	10.5		10.0					7.5						4.0			
6- 7			9.0			7.5	8.5							7.5									
7- 8						7.0	7.0		9.5					8.0					4.0				
8- 9	10.5		11.0			6.5								8.5	8.0	10.0							
9-10						6.5			8.5	10.0				8.5						4.0			
10-11	8.0							10.0						9.0		6.5							
11-12							11.0		8.0					9.5			7.5		3.5				
12-13	5.5			11.0			9.0				10.5	8.5		9.5			10.0						
13-14							7.5	11.0						10.0						3.5			
14-15							5.5			10.0				10.5							1.5		3.0
15-16	9.0		10.0											10.5					3.5				
16-17		10.5												11.0								3.0	
17-18	6.0												5.0							3.0			
18-19							9.5						5.5					2.0					
19-20							7.5			10.0			6.0						3.0				2.0
20-21	9.5						6.0						6.0										
21-22					8.0								6.5			8.0	6.5			3.0			
22-23	7.0		9.0		8.0								7.0				9.0						
23-24					7.5								7.0					3.5	2.5				
24-25			11.0		7.5		10.0	10.5		10.0			7.5										1.5
25-26	10.5				7.5		8.0						8.0		6.5					2.5			
26-27					7.5		6.5						8.0										
27-28	7.5				7.5							8.0	8.5						2.5				
28-29					7.0								9.0										
29-30					7.0					10.0			9.0							2.0			
30-31	11.0				7.0		10.5						9.5										

	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	SX CMA	XZ CMI	AK CMI	TY CAP	RZ CAS	TV CAS	AB CAS
MAX	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	10.3	9.7	10.1	10.5	6.4	7.3	10.2
MIN	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	11.4	10.2	11.5	11.6	7.8	8.4	12.2
DUR	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	4	4	3	4	4	4	4	4
TOT			(S)		(S)		(S)		(S)	(S)					(S)								
0- 1				2.0	6.0	3.0	7.0	5.5	2.0					10.0				2.0				9.0	8.0
1- 2				1.5	5.5	2.0	6.0	2.5	6.5		1.5	5.0	2.5	4.5							4.0		
2- 3	3.5				5.0		4.5		3.5			9.5	10.5		8.0		1.5				9.0		
3- 4					4.0	7.5	3.5	4.5							2.0					11.0			1.5
4- 5				7.5	3.5	6.0	2.5	2.0	5.5	6.0	9.0	4.0		5.5				3.0					10.5
5- 6	2.5			7.0	3.0	5.0		6.5	3.0			8.5	2.0		9.0				3.5				
6- 7				6.0	2.0	4.0	7.5	4.0					10.0		3.5					7.5			
7- 8				5.5	1.5	2.5	6.5		5.0			3.5		7.0							3.5		4.0
8- 9			3.0	5.0		1.5	5.5	6.0	2.5			8.0			10.5						8.0		
9-10				4.0			4.0	3.5	7.0	5.5			2.0		5.0				2.5			10.5	
10-11				3.5	7.5	6.5	3.0		4.0			2.5	9.5	8.5									
11-12				3.0	6.5	5.5	2.0	5.0	1.5			7.0		2.5				1.5				6.0	6.5
12-13				2.0	6.0	4.5		2.5	6.0						6.0								
13-14		2.5		1.5	5.5	3.0	7.0	7.0	3.5			1.5	1.5	9.5					1.5	10.0	3.0		
14-15					5.0	2.0	6.0	4.5		5.5	7.0	6.0	9.5	4.0							7.5		
15-16	3.5				4.0		4.5	2.0	5.5			10.5			7.5		1.5	3.0					9.0
16-17				7.5	3.5	7.5	3.5	6.5	3.0					11.0	2.0								
17-18				6.5	3.0	6.0	2.5	4.0				5.5		5.5									
18-19	2.5		2.0	6.0	2.0	5.0			5.0			10.0	9.0		9.0	1.5			3.5				2.5
19-20				5.5	1.5	4.0		6.0	2.0	5.0					3.5						2.5		
20-21				5.0		2.5	6.5	3.0	6.5			4.5		7.0							7.0	7.5	
21-22				4.0		1.5	5.5		4.0			9.0			10.5								
22-23				3.5	7.5		4.0	5.0	1.5				8.5		4.5			1.5	3.0				5.0
23-24		1.5		3.0	6.5	7.0	3.0	2.5	6.0			3.5		8.0						9.5			
24-25				2.0	6.0	5.5	2.0	7.0	3.5	5.0	5.0	8.0		2.5									
25-26				1.5	5.5	4.5		4.5							6.0						2.0		
26-27					4.5	3.5	7.0	2.0	5.5			3.0	8.5	9.5				3.0	2.0		6.5		7.5
27-28					4.0	2.0	6.0	6.5	3.0			7.5		4.0									
28-29	3.5			7.5	3.5		5.0	3.5							7.5		1.5						
29-30				6.5	3.0	7.5	3.5		4.5	5.0		2.0		11.0	1.5							9.0	
30-31				6.0	2.0	6.5	2.5	5.5	2.0			6.5	8.0	5.0									10.0

	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	PV CAS	V364 CAS	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
MAX	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10.0	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	11.0	11.0
MIN	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1	9.6	14.2	13.2	12.4	10.6	11.6	11.6
DUR	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3	3	4	4	5	4	3	3	3
TOT													2										
		(S)							(S)		(S)					(S)							(S)
0- 1	2.5	6.5		6.0											4.0	9.0		6.5			3.0	5.0	2.0
1- 2	1.5	5.5				8.0	1.5						2.0			5.0		6.5			5.0	3.5	
2- 3		4.5	9.5	7.0			7.5								6.0			6.0	10.5		7.5	2.5	5.5
3- 4	7.0	3.0													2.0	7.0	3.5	5.5			9.5		4.0
4- 5	6.0	2.0		8.0				9.5							8.0	3.0		5.5					3.0
5- 6	5.0								7.5						4.0	9.0		5.0		5.0		4.5	1.5
6- 7	4.0		8.0	9.0							8.0	11.0	2.0	10.0		5.0		4.5		9.0	3.0	3.5	
7- 8	3.0	6.5					7.0							8.0	6.5			4.5	7.5		5.0	2.0	5.0
8- 9	2.0	5.5		10.0		7.0								5.5	2.5	7.5		4.0			7.0		4.0
9-10		4.5				11.0					10.5	10.0			8.5	3.5		3.5			9.0	5.5	2.5
10-11	7.5	3.5	6.0	11.0	7.5										4.5	9.5	4.0	3.5				4.0	
11-12	6.5	2.5						9.5					1.5			5.5		3.0				3.0	
12-13	5.5	1.5			4.0		7.0		7.5			8.5			6.5	1.5		2.5	5.0	4.0	2.5	2.0	4.5
13-14	4.5		9.5												2.5	7.5		2.5		8.0	4.5		3.5
14-15	3.5	7.0													8.5	3.5					7.0	5.0	2.0
15-16	2.0	6.0		5.5								7.0		10.5	4.5	9.5					9.0	4.0	
16-17		5.0				9.5				9.0				8.0		5.5					11.0	2.5	5.5
17-18		4.0	7.5	6.5			6.5							5.5	6.5	1.5	4.0		2.5			1.5	4.0
18-19	7.0	3.0						10.0				6.0		3.5	3.0	8.0					2.5		3.0
19-20	5.5	2.0		7.5					7.5	11.0					9.0	4.0				3.5	4.5	4.5	2.0
20-21	4.5		11.0												5.0	10.0			8.5	7.5	6.5	3.5	
21-22	3.5	7.5	5.5	8.5	9.0							4.5				6.0					9.0	2.0	5.0
22-23	2.5	6.5					6.0								7.0	2.0					11.0		4.0
23-24	1.5	5.5		9.5	5.0	8.5					7.5				3.0	8.0						5.5	2.5
24-25		4.5	9.0									3.5		11.0	9.0	4.0	4.5				2.0	4.5	1.5
25-26	7.0	3.5		10.5				10.0						8.5	5.0				6.0		4.5	3.0	
26-27	6.0	2.0							7.5		9.5			6.0		6.0				3.0	6.5	2.0	4.5
27-28	5.0						5.5					2.0		3.5	7.0	2.0				6.5	8.5		3.5
28-29	4.0		7.5												3.0	8.0				10.5	10.5	5.0	2.5
29-30	3.0	7.0													9.5	4.5						4.0	
30-31	2.0	5.5				7.5									5.5				3.5		2.0	2.5	5.5

	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	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG
MAX	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	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8
MIN	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	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6
DUR	3	3	4	4	2	2	5	4	4	4	4	4	4	6	5	5	4	4	4	3	4	5	5
TOT															2								
		(S)		(S)		(S)				(S)		(S)											
0- 1	2.0	6.0		5.0	5.0	2.5		8.5	5.0		7.0		4.5	5.5		7.5	3.5	9.5	5.5		8.5		
1- 2	2.5	6.5	5.5		2.5	5.0		2.0		4.5							10.0	9.0			7.5		10.5
2- 3	3.0	7.0	1.5	6.5	5.0	2.0			4.0			3.5						8.0		9.5	6.0		
3- 4	3.5	7.5	7.5	2.5	2.0	4.5		6.5		3.0	7.0			5.5			7.0	7.5					
4- 5	3.5	7.5	3.0	8.0	4.5	2.0			2.5	7.0								6.5	5.5	7.0			4.0
5- 6	4.0	8.0	9.0	4.0	1.5	4.5		10.5	6.5	1.5		3.0	2.5				4.5	6.0					
6- 7	4.5		4.5	9.5	4.0	1.5		4.0		5.5	6.5			5.0			10.5					11.0	
7- 8	5.0			5.5		4.0			5.0				5.0							11.0	10.0		
8- 9	5.0		6.0		4.0		9.5	8.5		4.0		3.0					7.5		5.5		8.5		
9-10	5.5	1.5	2.0	7.0		3.5		2.0	3.5		6.5			5.0						8.5	7.5	7.0	
10-11	6.0	2.0	7.5	3.0	3.5				7.5	2.5						6.5	5.0				6.0		
11-12	6.5	2.0	3.5	8.5		3.5		6.0	2.0	6.5		2.5								6.0			
12-13	6.5	2.5	9.0	4.5	3.0				6.0		6.0		3.0	5.0					5.5				9.5
13-14	7.0	3.0	5.0			3.0		10.5		5.0							8.5						
14-15	7.5	3.5		6.0	3.0			4.0	4.5			2.5	5.5		4.5					9.5			
15-16	8.0	3.5	6.5	1.5		2.5	7.0			4.0	6.0			5.0			5.5				10.0		
16-17		4.0	2.5	7.5	2.5	5.0		8.0	3.0										5.5	7.0	9.0		
17-18		4.5	8.0	3.0	5.0	2.5		1.5	7.0	2.5		2.0									7.5		
18-19		5.0	4.0	9.0	2.0	5.0			1.5	6.5	5.5			5.0			9.0				6.0		
19-20		5.0	9.5	4.5	4.5	2.0		6.0	5.5				3.5							10.5			
20-21	1.5	5.5	5.5		2.0	4.5				5.0		2.0				5.5	6.5		5.5				
21-22	2.0	6.0		6.5	4.5	1.5		10.5	4.0		5.5		6.0	4.5						8.0			
22-23	2.0	6.5	7.0	2.0	1.5	4.0	5.0	3.5		3.5							3.5						
23-24	2.5	6.5	3.0	8.0	4.0				2.5	7.5		1.5			8.0		10.0			5.5	10.0		9.0
24-25	3.0	7.0	8.5	3.5		4.0		8.0	6.5	2.0	5.0		1.5	4.5					5.5		9.0		
25-26	3.5	7.5	4.5	9.5	3.5			1.5		6.0		7.5					7.0				7.5		
26-27	3.5	8.0		5.0		3.5			5.0				4.0							9.5	6.0	8.0	
27-28	4.0		6.0		3.5			5.5		4.5	4.5			4.5			4.5						
28-29	4.5		1.5	6.5		3.0			4.0			7.0					10.5		5.5	7.0			
29-30	5.0		7.5	2.5	3.0		2.5	10.0		3.0													
30-31	5.0		3.5	8.0		3.0		3.5	2.5	7.0	4.5			4.5		4.0	8.0	10.5					

	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 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
MAX	11.5	9.7	10.8	10.8	10.8	8.3	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
MIN	12.3	10.3	11.9	11.6	11.6	9.2	8.7	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
DUR	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	5	4	4	5
TOT									2							1				1			1
					(S)		(S)											(S)					
0- 1		5.5	8.5		4.5								10.0		7.0			11.0	11.0			5.0	
1- 2	6.5		6.0								8.0			7.0	9.5								
2- 3				6.5		10.0		5.5				8.5					2.0						
3- 4								9.0															
4- 5					9.0								8.0		3.5				1.5			7.0	
5- 6		9.0												8.5	6.0		8.5		6.0			3.0	7.0
6- 7	9.5	6.0		11.0				5.5				7.5			8.5				11.0				
7- 8								9.0			7.0				11.0								
8- 9	7.5		9.0											2.0		8.0						9.5	
9-10			6.5	5.5		11.0								10.5	2.5							5.0	
10-11	5.5							5.5				6.5			5.0			6.0					
11-12		9.5			8.0			9.0					9.5		7.5	3.5			6.0				
12-13		6.0												3.5	10.0				11.0				2.0
13-14	10.5			10.0								11.0										7.0	
14-15								5.5		10.5	10.5	6.0			1.5							3.0	8.5
15-16	8.5							9.0					7.5		4.0		3.5						
16-17			9.5	4.5					8.0					5.5	6.5								
17-18	7.0	10.0	7.0				5.0			7.5		10.0			9.0				6.0			9.5	
18-19		6.5	4.5		6.5			5.0					10.5				9.5		10.5			5.0	
19-20	5.0							8.5															
20-21				9.0							9.5			7.0	3.0								
21-22						4.5						9.0			5.5								4.0
22-23	10.0				11.0			5.0					8.5		8.0	9.0						7.0	
23-24		10.0						8.5							10.5			7.0	6.0			3.0	10.0
24-25	8.0	7.0	10.0				6.0							9.0					10.5				
25-26			7.5		5.5							8.5			2.0	4.5				2.0			
26-27	6.0		5.0					5.0			8.5		6.5		4.5							9.5	
27-28				8.0				8.5						2.0	7.0							5.0	
28-29						5.5								10.5	9.5		4.5						
29-30	11.0	10.5			10.0							7.5	9.5						5.5		3.5		
30-31		7.0						5.0											10.5				5.5

	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	UV LEO	VZ LEO	T LMI	SS LIB	DELT LIB	RY LYN	UZ LYR
MAX	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	9.5	10.6	10.2	10.4	4.8	11.9	9.8
MIN	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	10.2	11.7	12.6	11.3	5.9	13.3	11.0
DUR	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	6	6	7	4	5
TOT						(S)				(S)				(S)									
0- 1				6.0	2.0							10.0			5.5							6.5	
1- 2		3.0	9.0		2.0			2.0		7.5						4.0			2.5				
2- 3	5.5				1.5			3.0		6.5				5.5			4.0			3.5	8.5		
3- 4			4.0		1.5		2.5	4.0														3.5	
4- 5																			3.0				
5- 6	8.0					5.0						5.5		7.5	7.0		4.0						
6- 7		8.0				5.0	4.0		7.5							5.0							
7- 8				2.0		4.5												2.0	3.5				
8- 9	10.5	1.5				4.5					6.5	10.5		9.5			4.0	4.0					10.5
9-10				3.0		4.0					8.5		4.5							8.0	8.0		
10-11			7.5			4.0				7.0	10.0								4.0			7.5	8.0
11-12				4.5		4.0	2.0									6.0	4.0						
12-13			2.5			3.5							6.5							5.0			5.5
13-14		6.5		5.5		3.5		2.0				6.0							4.5			4.5	
14-15						3.0	4.0	3.5	7.5								4.0						
15-16						3.0		4.5	7.0				8.5										
16-17	4.0					3.0						11.0							5.0		7.5	1.5	
17-18			11.0			2.5									2.0		4.0						
18-19						2.5				7.5			10.5										
19-20	6.5		6.0			2.5	2.0			6.5				4.5				2.0	5.5	9.5			
20-21		5.0		1.5		2.0											4.0	4.0					
21-22						2.0						6.5						6.0					
22-23	9.0			2.5		1.5	3.5							6.5	3.5				6.0	6.5			
23-24						1.5			7.0		7.5						4.0				7.0	5.5	
24-25				4.0							9.5												
25-26		10.0			5.0			2.5			11.0			8.5					6.5	4.0			11.0
26-27			9.5	5.0	5.0			3.5									4.0					2.5	
27-28		3.5			4.5		1.5	4.5		7.0					5.0								8.5
28-29			4.5		4.5									10.5					7.0				
29-30					4.5							7.0	5.5				4.0						6.0
30-31					4.0		3.5														6.5		

	EW LYR	FL LYR	RW MON	AT MON	BB MON	BO MON	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH	FT ORI	GU ORI	GU ORI	TY PEG	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	RT PER	RV PER	XZ PER
MAX	11.2	8.7	9.1	10.6	10.6	10.8	5.8	10.5	10.1	8.8	6.2	9.1	12.6	12.6	10.5	10.6	10.6	10.9	9.6	10.2	10.6	10.3	10.6
MIN	13.6	9.5	11.9	11.4	11.3	12.1	6.5	11.2	10.7	9.4	7.0	9.7	13.5	13.5	12.6	11.2	11.2	11.5	10.8	11.0	12.0	12.7	12.7
DUR	5	4	5	5	4	5	5	5	3	3	4	4	4	4	6	3	3	3	2	4	4	8	4
TOT			1			1								(S)			(S)						
0- 1		3.5				3.5	5.0		6.0		8.0			2.5					9.0				
1- 2					2.5				6.5	6.0													
2- 3		8.0							7.5		7.5												
3- 4										7.0												1.5	
4- 5											7.0		2.5			8.5					1.5		
5- 6							6.0			8.0													
6- 7										3.5	7.0						8.0	6.5		11.0			
7- 8									3.5	9.0										10.5	11.0		
8- 9									4.0	4.5	6.5			2.5		8.0				9.5			
9-10									5.0						9.5					9.0			2.5
10-11							6.5		6.0	6.0	6.0						7.5			8.5			
11-12									6.5			2.0								8.0			
12-13					2.0				7.5	7.0	5.5		3.0			7.5				7.5			
13-14		5.0							8.5														
14-15				2.0						8.0	5.5												
15-16		9.5					7.5			3.5								6.0					
16-17				2.5						9.0	5.0			3.0									
17-18			1.5						3.5	4.5									11.0				
18-19								3.5	4.0		4.5												
19-20									5.0	5.5							8.5						
20-21							8.0	5.0	6.0		4.0		3.0										
21-22									6.5	7.0			1.5			8.5							
22-23								6.5	7.5		3.5							6.0	10.5				
23-24					2.0				8.0	8.0							8.0						
24-25	11.0	2.5						8.0		3.5				3.0							10.5		2.0
25-26							9.0			9.0	11.0			1.5		7.5							
26-27	9.5	7.0						9.5		4.5													
27-28									3.5		10.5						7.5		10.0				
28-29	8.5							11.0	4.0	5.5													
29-30						1.5			5.0		10.5		1.5					6.5					
30-31	7.0						9.5		5.5	6.5													

	BETA PER	Y PSC	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RZ TAU	WY TAU	AM TAU	V TRI	X TRI	RV TRI	W UMA	W UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA
MAX	2.2	9.0	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	10.5	11.5	10.4	10.9	8.9	11.4	9.1	9.1	11.7	11.7	12.7	10.1	10.1
MIN	3.5	12.0	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	11.2	11.7	12.3	11.9	12.0	12.5	9.9	9.9	12.4	12.4	13.8	11.0	11.7
DUR	8	7	4	4	6	5	4	4	4	4	3	4	5	4	4	4	3	3	3	3	1	3	3
TOT					2																		
				(S)						(S)								(S)		(S)			
0- 1								3.0	7.0								3.5	7.5		4.5	9.0		8.5
1- 2							7.5		7.5	1.5							4.0	8.0	2.0	6.0	4.0	5.0	
2- 3						10.5	10.5		8.5	2.0						11.0	4.0	8.0	3.5	8.0	8.5		
3- 4									9.0	3.0				10.5			4.0	8.0	5.0		3.0	6.5	
4- 5									10.0	3.5							4.0	8.0	6.5	2.5	7.5		
5- 6					6.0		6.0	9.5	10.5	4.5							4.0	8.0	8.0	4.0	2.5	8.0	5.5
6- 7							9.0	6.5		5.0					10.5		4.0	8.0		5.5	7.0		
7- 8								3.5		6.0		2.0					4.0	8.0	2.5	7.0	1.5	9.5	
8- 9						8.5				7.0							4.0	8.0	4.0	8.5	6.0	2.0	
9-10										7.5							4.0	8.0	5.5	1.5			
10-11			3.0				8.0		2.0	8.5				11.0			4.0	8.0	7.0	3.0	5.0	3.5	3.0
11-12							11.0		3.0	9.0							4.0	8.0		4.5			8.5
12-13				2.5				10.5	3.5	10.0							4.0	8.0	2.0	6.0	4.5	5.0	
13-14								7.5	4.5	10.5							4.0		3.5	7.5	8.5		
14-15			2.0				6.5	4.5	5.0		1.5						4.0		5.0		3.5	6.0	
15-16					9.0	11.0	9.5	1.5	6.0								4.0		6.5	2.0	8.0		
16-17				2.0					6.5			2.5					4.0		8.0	3.5	3.0	7.5	6.0
17-18									7.5								4.0			5.0	7.0		
18-19	11.0		1.5						8.5	2.0							4.0		2.5	6.5	2.0	9.0	
19-20							8.0		9.0	3.0							4.0		4.0	8.0	6.5	1.5	
20-21							11.0	8.5	10.0	3.5			1.5	9.5			4.0		5.5				
21-22						8.5		5.5	10.5	4.5							4.0		7.0	3.0	5.5	3.0	3.0
22-23								2.5		5.0			2.5				4.0			4.5			8.5
23-24							6.5			6.0							4.0		1.5	6.0	4.5	4.5	
24-25							9.5			6.5							4.5		3.0	7.5	9.0		
25-26										7.5		2.5					4.5		4.5		4.0	6.0	
26-27									2.0	8.0							4.5		6.0	2.0	8.0		
27-28	1.5					6.5	5.5	9.0	3.0	9.0				10.0			4.5		7.5	3.5	3.0	7.5	6.0
28-29						11.0	8.5	6.0	3.5	10.0							4.5			5.0	7.5		
29-30		10.0						3.5	4.5	10.5							4.5		2.0	6.5	2.5	9.0	
30-31									5.0								4.5		4.0	8.0	6.5	1.5	

	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	BT VUL	BU VUL	CD VUL
MAX	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	11.8	10.6	11.5
MIN	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	12.5	11.4	12.6
DUR	4	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		8.5	7.5		4.5				4.5		4.5	9.5	7.5	10.0								
1- 2	4.0	9.5	5.0	6.5		5.0	3.0	2.0	6.0		5.5	5.0		5.0			10.0		10.5			5.0
2- 3		11.0	2.0		5.5		8.0	3.5	7.5	2.5	6.5								9.5		7.5	
3- 4				4.5		6.0		5.0		3.5	8.0								8.0		10.5	6.5
4- 5			7.5		6.5	1.5		6.5	2.0	5.0				10.5					7.0	7.5		
5- 6		2.0	5.0	3.0	2.0	7.0		8.0	3.5	6.0	2.0	7.0	5.5	6.0					6.0	11.0		7.5
6- 7		3.0	2.5		7.5	2.5			5.0	7.0	3.0	2.5							4.5		7.0	
7- 8		4.0			3.0	8.0	2.5	2.5	6.5		4.0							10.0			10.5	9.0
8- 9	1.5	5.5	8.0	8.0	8.0	3.5	7.0	4.0	8.0		5.5					8.5						
9-10		6.5	5.5		4.0	8.5		5.5		2.5	6.5	9.0		6.5				8.5				10.0
10-11	9.0	8.0	3.0	6.5		4.0		6.5	2.5	3.5	7.5	5.0									6.5	
11-12		9.0			4.5			8.0	4.0	4.5								7.5	10.5		10.0	
12-13		10.0	8.5	4.5		5.0			5.5	6.0	1.5						7.0		9.0	7.5		
13-14			6.0		5.5		1.5	2.5	7.0	7.0	3.0			7.5				6.0	8.0	10.5		
14-15			3.5	3.0		6.0	6.5	4.0	8.5	8.0	4.0	7.0							7.0		6.0	5.0
15-16					6.5	1.5		5.5	1.5		5.0	2.5					9.5	4.5	5.5		9.5	
16-17		2.5	9.0		2.0	7.0		7.0	3.0	2.0	6.5				5.5				4.5			6.5
17-18	6.5	3.5	6.0	8.0	7.5	2.5			4.5	3.5	7.5			8.0								
18-19		5.0	3.5		3.0	8.0		1.5	6.0	4.5		9.0			6.0						5.5	7.5
19-20		6.0		6.0	8.5	3.5		3.0	7.5	5.5	1.5	4.5									9.0	
20-21		7.0	9.0		4.0	8.5	5.5	4.5		7.0	2.5				6.5	10.0				7.0		8.5
21-22		8.5	6.5	4.5		4.5		6.0	2.0	8.0	4.0			9.0					10.0	10.5		
22-23		9.5	4.0		5.0			7.5	3.5		5.0		10.0		7.0				9.0		5.5	10.0
23-24		10.5	1.5	2.5		5.0			5.0	2.0	6.0	6.5							8.0		8.5	
24-25	4.0				5.5			2.0	6.5	3.0	7.5	2.0			7.5				7.0			
25-26			7.0			6.0		3.5	8.0	4.5				10.0		6.0			5.5			
26-27		1.5	4.5	8.0	6.5	1.5	5.0	5.0		5.5	1.5			5.0	8.0		6.0		4.5			
27-28		3.0	2.0		2.0	7.0		6.5	2.5	6.5	2.5	8.5	7.5								8.0	5.0
28-29		4.0		6.0	7.5	2.5		8.0	4.0	8.0	3.5	4.0			9.0					6.5		
29-30		5.5	7.5		3.0	8.0			5.5		5.0			10.5			8.5			10.0		6.0
30-31		6.5	4.5	4.5	8.5	3.5		2.5	7.0	2.0	6.0			6.0	9.5							

AAVSO Eclipsing Binary Ephemeris for June 2020 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	AP 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	10.9
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	11.4
DUR	3	11	8	4	3	3	3	4	3	4	4	3	3	7	3	3	7	4	4	3	3	5	4
TOT		2															3						
							(S)	(S)			(S)					(S)					(S)	(S)	
0- 1				10.0	11.0		7.0	11.0	8.5		8.5		10.0		9.5	3.5			5.5				2.0
1- 2	8.5		11.0				7.0	10.5	7.0	9.0	9.0				10.0	4.0		9.5	8.0	8.5			
2- 3							6.5	10.0	5.0		9.0	7.5			10.5	4.5			10.5		9.0		
3- 4	5.5						6.5	10.0			9.5	10.5			10.5	4.5		6.0		9.5			
4- 5			10.0				6.5	9.5		10.0	9.5					5.0	11.0				9.5		
5- 6				6.5			6.5	9.0	10.5		10.0					5.5							
6- 7	9.0						6.5	9.0	9.0		10.0		11.0			5.5							
7- 8			9.5	9.0			6.0	8.5	7.0		10.5	7.5				6.0							
8- 9	6.5						6.0	8.0	5.5		10.5	10.5				6.5							
9-10				11.0			6.0	8.0	3.5		11.0					6.5							
10-11	3.5		9.0				6.0	7.5								7.0			4.5				
11-12	10.0				7.5		6.0	7.0						7.5		7.0	5.5		7.0			2.0	
12-13							5.5	7.0	9.5	8.5		8.0				7.5			9.5				
13-14	7.0		8.5				5.5	6.5	7.5			10.5	8.5	11.0		8.0							
14-15		7.0		8.0			5.5	6.0	6.0							8.0		7.5					
15-16	4.5				9.0		5.5	6.0	4.0	9.5						8.5					8.5		
16-17	10.5		7.5	10.0			5.0	5.5								9.0		4.0		9.0			
17-18							5.0	5.0				8.0			3.0	9.0					9.5		
18-19	8.0	10.0					5.0	5.0	10.0	11.0		10.5			3.5	9.5							
19-20			7.0				5.0	4.5	8.0				9.5		4.0	10.0							
20-21	5.0						5.0	4.0	6.5						4.0	10.0							
21-22				6.5					4.5						4.5	10.5	10.0		6.0				
22-23												8.0			5.0	11.0			8.5				
23-24	8.5			9.0						8.0		10.5			5.0				11.0				
24-25									10.0						5.5								
25-26	6.0			11.0					8.5				10.5		5.5			9.0					3.5
26-27									6.5	9.5				7.0	6.0								
27-28									5.0			8.0			6.5			5.5					
28-29	9.5											10.5		10.0	6.5		4.5				8.5		
29-30						8.0				10.5					7.0					9.0			3.0

	AP 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	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS
MAX	10.9	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	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6
MIN	11.4	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	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6
DUR	4	3	3	3	3	3	3	5	6	3	5	5	5	5	4	4	4	4	3	3	4	4	5
TOT																							
	(S)		(S)		(S)		(S)	(S)					(S)							(S)			
0- 1		5.5		5.0		3.0	6.5						8.5	6.0			4.5			4.5	10.5		
1- 2		4.5		4.0			4.0						3.0			6.0			7.5	3.5	5.5	6.0	10.0
2- 3	2.0	4.0		3.0	6.5	5.0				5.5		6.5			8.5	10.5		3.5	6.5	2.5			
3- 4		3.5	7.5		5.5	2.5	6.0	4.5	3.0	10.0	7.5		10.0						5.5			7.0	6.5
4- 5		3.0	6.5		4.0	7.0	3.5						4.5						4.5		9.0		
5- 6		2.0	6.0	7.0	3.0	4.5				5.0		8.0			5.0				3.5	7.0	3.5	8.0	2.5
6- 7			5.5	5.5	2.0		5.0		10.5	9.5		2.5						6.0	2.5	6.0			
7- 8			4.5	4.5		6.0	2.5				7.0		6.0			5.5	10.5			5.0		9.0	
8- 9			4.0	3.5	7.0	3.5		4.5		4.0		9.5				10.0				4.0	7.0		
9-10		7.5	3.5	2.0	6.0		4.5			8.5		3.5					6.0		7.0	3.0		10.0	
10-11		6.5	3.0		5.0	5.5	2.0						7.0	10.0				8.5	5.5	2.0			
11-12		6.0	2.0	7.5	3.5	3.0	6.5			3.0	7.0	10.5							4.5		10.5	11.0	
12-13		5.5		6.5	2.5		4.0			7.5		5.0			7.5				3.5	7.5	5.0	3.5	
13-14		4.5		5.0		5.0		4.0					8.5			5.0		2.0	2.5	6.5			
14-15		4.0		4.0		2.0	6.0			2.5			3.0			9.5		10.5		5.5		4.5	7.5
15-16		3.5	7.5	3.0	6.5	7.0	3.0			7.0	6.5	6.5								4.5	8.5		
16-17		2.5	6.5		5.5	4.0			8.5				10.0						7.0	3.5	3.5	5.5	3.5
17-18		2.0	6.0		4.5		5.0						4.0	5.0				4.5	6.0	2.5			
18-19			5.5	7.0	3.0	6.0	2.5	4.0		6.0		7.5					7.5		5.0			6.5	
19-20			4.5	6.0	2.0	3.5	7.0			10.5	6.0	2.0			10.5	4.5			4.0		6.5		
20-21			4.0	4.5			4.5						5.5			9.0			3.0	7.0		7.5	
21-22		7.5	3.5	3.5	7.5	5.5	2.0			5.0		9.0						6.5	2.0	5.5			
22-23		6.5	2.5	2.5	6.0	3.0	6.5			9.5		3.5			7.0					4.5	10.0	8.5	
23-24		6.0	2.0		5.0		4.0	4.0			5.5		7.0						7.5	3.5	5.0		
24-25		5.5		7.5	4.0	4.5				4.5		10.5							6.5	2.5		9.5	
25-26		4.5		6.5	2.5	2.0	5.5			9.0		5.0				3.5		9.0	5.5				8.5
26-27		4.0		5.0		6.5	3.0		6.5				8.5			8.5			4.5		8.0	10.5	
27-28	3.0	3.5	7.0	4.0		4.0				3.5	5.5		2.5	9.5			9.0		3.5	7.0			5.0
28-29		2.5	6.5	3.0	6.5		5.0	3.5		8.0		6.0						3.0	2.5	6.0			
29-30		2.0	6.0	1.5	5.5	6.0	2.5						9.5		9.5		4.5			5.0		3.5	

	MM CAS	OR CAS	PV CAS	PV CAS	V364 CAS	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
MAX	11.3	11.4	10.0	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0	10.0	10.9	10.9	11.0
MIN	11.9	12.4	10.6	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9
DUR	5	4	3	3	4	4	5	4	4	3	3	4	4	5	4	3	3	3	3	3	4	4	2
TOT								2															
				(S)		(S)					(S)							(S)		(S)		(S)	
0- 1											6.5	4.5				4.0		4.5	5.5			4.0	2.5
1- 2		5.0	10.0							7.5	2.5					6.0		3.0	6.0	2.0	5.0		5.0
2- 3				7.5	8.5					3.5	8.5			10.0	2.0	8.5	4.5	2.0	6.5	2.5		5.5	2.5
3- 4			4.0				11.0		9.0	9.5	4.5				6.0	10.5	3.5		6.5	2.5	6.5		5.0
4- 5									6.5	5.5					10.0		2.5	5.0	7.0	3.0	2.0	7.0	2.0
5- 6					10.5				4.0		6.5							4.0	7.5	3.5		3.0	4.5
6- 7	6.0	4.5					9.5			7.5	2.5					4.0	5.5	2.5		4.0	3.5		
7- 8	10.0	10.5								3.5	8.5	5.0		7.0		6.0	4.5			4.0		4.5	4.0
8- 9			10.0							9.5	4.5					8.0	3.0			4.5	5.0		
9-10				7.5		7.0	8.5			5.5						10.5	2.0	5.0		5.0		6.0	4.0
10-11			4.0							2.0	7.0				5.5			3.5		5.5	7.0	2.0	
11-12		4.5								8.0	3.0				9.5		5.0	2.5		5.5	2.5	7.5	3.5
12-13		10.0				9.0	7.0		9.0	4.0	9.0			4.5		3.5	4.0		2.0	6.0		3.5	
13-14	5.0								6.5	10.0	5.0					6.0	3.0	5.5	2.5	6.5	4.0		3.0
14-15	8.5								4.5	6.0		5.5				8.0		4.5	2.5	7.0		5.0	
15-16			10.0				6.0		2.0	2.0	7.0			11.0		10.0		3.0	3.0	7.0	5.5		3.0
16-17		4.0		7.5	5.5					8.0	3.0						5.0	2.0	3.5	7.5		6.5	
17-18		10.0	4.0							4.0	9.0			2.0	4.5		3.5		4.0		7.0	2.5	2.5
18-19							4.5				5.0				8.5	3.5	2.5	5.0	4.0		3.0		5.0
19-20					7.5					6.0						5.5		4.0	4.5			4.0	2.0
20-21										2.0	7.0			8.0		7.5	5.5	3.0	5.0		4.5		4.5
21-22	7.5	3.5					3.5		9.5	8.5	3.5	5.5				10.0	4.5		5.5			5.5	2.0
22-23		9.5	10.0		9.5			10.5	7.0	4.5	9.5						3.0		5.5		6.0		4.5
23-24				8.0					4.5		5.5						2.0	5.0	6.0	2.0	2.0	7.0	
24-25			4.0				2.0		2.5	6.5					4.0	3.0		3.5	6.5	2.5	7.5	2.5	4.0
25-26										2.5	7.5			5.5	8.0	5.5	5.5	2.5	7.0	2.5	3.5		
26-27		3.0				6.5				8.5	3.5					7.5	4.0		7.0	3.0		4.0	3.5
27-28		9.0						10.5		4.5	9.5		10.5			9.5	3.0	5.5	7.5	3.5	5.0		
28-29	6.5										5.5	6.0	10.5					4.5		4.0		6.0	3.5
29-30	10.0		10.0			8.5				6.5			10.0					3.5		4.0	6.5		

	CC COM	U CRB	RW CRB	W CRV	W CRV	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
MAX	11.0	7.6	10.1	10.6	10.6	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
MIN	11.9	8.8	10.6	11.2	11.2	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
DUR	2	5	4	4	4	4	4	4	6	5	5	4	4	4	3	4	5	5	3	3	3	4	4
TOT										2													
	(S)				(S)		(S)																(S)
0- 1								2.0					10.0		10.5	10.5			9.0	3.5			
1- 2	2.5		8.0									5.0	9.0	5.0		9.0					10.5		4.5
2- 3	5.0			5.0		4.0			4.5				8.5		8.0	7.5			7.0		8.0		
3- 4	2.0				4.0							2.5	7.5			6.0		8.5			5.5	7.0	
4- 5	4.5		5.5	3.5								8.5	7.0		5.5	4.5			5.5	11.0	2.5		
5- 6	2.0				2.5	4.0			4.5				6.0	5.0						7.5			9.0
6- 7	4.5		10.0	2.0								5.5	5.5		3.0			2.5	3.5	4.0			
7- 8			3.0					2.5					5.0		9.0				10.0				
8- 9	4.0				5.0	3.5			4.0			3.0	4.0			10.5							3.5
9-10			7.5	4.5							3.0	9.0	3.5	5.0	6.5	9.0			8.5				
10-11	3.5				4.0											7.5					8.5	6.0	
11-12				3.0		3.5			4.0			6.5			4.0	6.0			6.5	7.5	6.0		
12-13	3.5		5.5		2.5						11.0				10.5	4.5	8.5			4.5	3.0		8.0
13-14												3.5		5.0					4.5				
14-15	3.0		9.5			3.0		3.0	4.0			10.0			8.0			8.0				10.0	
15-16		9.0	3.0		5.0					5.0							4.5						2.5
16-17	2.5			4.0								7.0			5.0	10.5			9.5				
17-18	5.0		7.5		3.5	3.0			4.0					5.0		9.0				8.0		5.0	
18-19	2.5			2.5			5.0					4.5				7.5			7.5	4.5	9.0		
19-20	5.0				2.0						2.0	10.5			9.0	6.0					6.5		7.0
20-21	2.0		5.0			2.5			4.0							4.5			5.5		3.5		
21-22	4.5			5.5			5.0	3.5				8.0		5.0	6.5							9.0	
22-23		6.5	9.5		4.5						9.5								4.0				
23-24	4.0		3.0	4.0		2.5			4.0			5.0			4.0				10.5	8.5			
24-25					3.0		4.5			8.5					10.0	10.5				5.0		4.0	
25-26	4.0		7.0	2.5								2.5		5.0		9.0		7.0	8.5				
26-27						2.0			3.5			8.5			7.5	7.5					9.5		6.0
27-28	3.5						4.5									6.0			7.0		7.0		
28-29			5.0	5.0				4.0				6.0			5.0	5.0					4.0	8.0	
29-30	3.0	4.5			4.0	2.0			3.5					5.0		3.5	9.5		5.0	8.5			

	V477 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	AF GEM	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA
MAX	8.3	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	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	11.0
MIN	9.2	8.7	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	11.3	12.0	13.4	9.8	12.8	11.2	10.6	11.5	11.5
DUR	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	4	5	5	4	4	4	4	4
TOT				2							1						1						
		(S)											(S)										(S)
0- 1		7.0	8.5						3.5	3.5		10.5				7.0							
1- 2						7.5				6.0						3.0			8.0				
2- 3							6.5	7.5		8.5			2.0					5.0					
3- 4			5.0							10.5									2.0				
4- 5	6.5		8.0						5.5					5.5		9.5				8.0	2.5	3.0	
5- 6							11.0	11.0		2.5	9.5		8.0	10.5		5.0		7.5				3.0	
6- 7					10.0		6.0	5.5		5.0										2.5	3.5	2.5	
7- 8		8.0	4.5			6.5				7.0												2.5	
8- 9			8.0						7.0	9.5	5.0						7.0	9.5	6.5			2.5	
9-10				9.0	7.0		10.0	9.0								7.0						2.0	
10-11							5.0					5.5		5.5		2.5						2.0	
11-12	7.5		4.5							4.0				10.0									
12-13			8.0						9.0	6.0													
13-14						5.5	9.0	7.0		8.5					2.0	9.5				6.0			
14-15		9.0		4.0		10.0	4.0									5.0							
15-16			4.5						2.0				3.0				2.5		5.0				
16-17			8.0					10.0	10.5	3.0				5.0				3.5					
17-18							8.5	5.0		5.0				10.0			8.5				2.0		
18-19	8.5									7.5			9.0			7.0							
19-20			4.5			4.5			4.0	10.0	10.5					2.5		6.0			3.0		
20-21			7.5			9.0		8.0											10.0	9.5			
21-22		10.0					7.5			2.0													
22-23										4.0	6.0			5.0		9.0		8.5	3.5	4.5			
23-24			4.0						5.5	6.5		6.5		10.0		5.0							
24-25			7.5					6.0		9.0							4.0						3.0
25-26	9.5		11.0				6.5											10.5					3.0
26-27		2.5				8.0											10.5						2.5
27-28			4.0					9.0	7.5	3.0						7.0			8.5				2.5
28-29		11.0	7.5				11.0			5.5			4.0	5.0		2.5							2.5
29-30			11.0		9.0		6.0			8.0				9.5					2.0	8.0			2.0

	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	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH	U PEG
MAX	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	5.8	10.5	10.1	8.8	6.2	9.7
MIN	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	6.5	11.2	10.7	9.4	7.0	10.5
DUR	4	3	3	4	4	5	5	5	4	3	4	6	7	4	5	5	4	5	5	3	3	4	3
TOT			(S)				(S)																
0- 1		7.5													3.5					6.5	2.5		
1- 2		7.0				7.5				4.0	3.5	8.5				6.0		2.0		7.5	8.0	2.0	
2- 3		6.0							2.0											8.0	3.5	9.5	
3- 4		5.0														4.5					9.0		
4- 5			7.5			10.0				4.0		5.5						10.5			4.5	9.0	9.0
5- 6			6.5	5.0			3.5							3.5		3.5				2.5			
6- 7	2.5		5.5	7.0	7.5								6.0				4.5	2.5		3.0	5.5	9.0	
7- 8			5.0	8.5					3.0	4.0		2.5				2.5				4.0			9.0
8- 9				10.5			6.0										8.5			5.0	6.5	8.5	
9-10		7.0																		5.5	2.5		
10-11		6.5								4.5										6.5	8.0	8.0	9.0
11-12		5.5			3.0		8.0											3.5		7.5	3.5		
12-13		4.5				3.0			4.0											8.0	9.0	7.5	
13-14			7.0							4.5	3.5		5.5		9.0						4.5		9.0
14-15			6.0		8.0		10.0					7.0										7.5	
15-16			5.0			5.0								4.5	6.5					2.5	5.5		
16-17										4.5								4.0		3.0		7.0	9.0
17-18		7.5										4.0			4.0					4.0	6.5		
18-19		6.5				7.0		3.0											2.5	5.0	2.5	6.5	
19-20		6.0		4.0	3.5					4.5							6.0			5.5	7.5		9.0
20-21		5.0		6.0									5.5						4.0	6.5	3.5	6.0	
21-22			7.5	8.0		9.0											10.0	5.0		7.5	9.0		
22-23			6.5	9.5	8.5		3.0			4.5									5.5	8.0	4.5	6.0	8.5
23-24			5.5					4.5															
24-25			4.5			11.0						8.5							7.0		5.5	5.5	
25-26							5.0			4.5	3.0									2.5			8.5
26-27		7.0																5.5	8.5	3.0	6.5	5.0	
27-28		6.0			4.0							5.5	5.0							4.0	2.0		
28-29		5.5					7.0			4.5				2.5						5.0	7.5	4.5	8.5
29-30		4.5																		5.5	3.5		

	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	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	V TRI	X TRI	RV TRI
MAX	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	6.4	6.4	12.3	10.6	11.1	11.1	10.9	8.9	11.4
MIN	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	9.1	7.6	13.3	12.1	11.7	11.7	11.9	12.0	12.5
DUR	3	6	12	3	3	3	2	4	6	4	8	5	4	8	6	5	4	4	4	4	4	4	4
TOT			4						2			1			2								
	(S)				(S)															(S)			
0- 1					7.0	5.5											4.0		6.0				
1- 2							9.5								7.0		7.0		6.5				
2- 3	7.5			6.5		4.5										4.5	10.0		7.5				8.5
3- 4				8.5									10.5			9.0		10.0	8.0	2.0	10.5		
4- 5					6.5													7.0	9.0	3.0			
5- 6	7.5				8.5	6.5											5.5	4.0	10.0	3.5			9.0
6- 7				6.0			9.0										8.5			4.5	9.0		
7- 8				8.0		6.0			8.0											5.0			
8- 9	7.5				5.5															6.0			9.5
9-10		7.5			8.0	5.0										7.0	4.0			6.5		10.5	
10-11			7.5	5.5					9.5	10.5				9.5			7.0			7.5		10.0	
11-12	7.5			7.5		4.0	8.5								10.5		10.5	8.0	2.0	8.0		9.5	10.0
12-13		9.5																5.0	3.0	9.0		8.5	
13-14					7.0				11.0									2.0	3.5	9.5	9.5		
14-15	7.5					6.0											6.0		4.5				10.0
15-16				7.0				11.0								5.0	9.0		5.0				
16-17						5.0	8.5	10.5		9.0		10.5				9.0			6.0		7.5		
17-18	7.5				6.5			9.5											6.5				10.5
18-19					8.5	4.5		9.0					10.0		4.5		4.5	8.5	7.5				
19-20				6.5				8.5			10.5						7.5	6.0	8.0	2.0			
20-21	7.5			8.5				8.0									10.5	3.0	9.0	2.5	10.0		11.0
21-22			10.0		6.0	6.5	8.0	7.5											9.5	3.5			
22-23					8.0			7.0								7.0				4.5			
23-24	7.0			6.0		5.5		6.0									6.0			5.0	8.0		
24-25				8.0				5.5				9.0					9.0			6.0			
25-26					5.5	4.5												9.5		6.5			
26-27	7.0				7.5		7.5											6.5		7.5			
27-28				5.0						10.0							5.0	4.0	2.0	8.0	10.5		
28-29				7.5		6.5	10.5								8.0	5.0	8.0		2.5	9.0			
29-30	7.0															9.5	11.0		3.5	9.5			

	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)					
0- 1	4.5		5.5						7.5	2.0		4.0			4.0		3.0	7.5					
1- 2	4.5		7.0	2.5	6.0	3.0	3.0		9.0		2.5		4.5	4.0	5.5		4.0		6.0	5.5		10.0	
2- 3	4.5		8.5	4.0				9.0	10.0			5.0			7.0	2.5	5.5						
3- 4	4.5			5.5	5.0	4.5				5.0			5.5			4.0	6.5	2.5			6.5	10.5	
4- 5	4.5		3.0	7.0	9.5					2.5		5.5				5.5	8.0	3.5					
5- 6	4.5	2.5	4.5		4.0	6.0							6.0		3.0	7.0		4.5					
6- 7	4.5		6.0		8.5				2.5		6.0	6.5	1.5		4.5			6.0	3.5	3.5			7.5
7- 8	4.5		7.5	3.0	3.5	7.5	6.0		3.5	5.5		2.0		3.5	6.0		3.0	7.0			7.5		
8- 9	4.5	4.0		4.5	7.5				4.5	3.0	4.5		2.5		7.5	3.0	4.0						
9-10	4.5		2.0	6.5	2.5			6.5	6.0			3.0				4.5	5.5						
10-11	4.5		3.5	8.0	7.0				7.0		2.5		3.5		2.0	6.0	6.5	2.0	6.0				
11-12	4.5	5.5	5.0		2.0				8.5	6.0		4.0			3.5		7.5	3.5			8.0		3.0
12-13	4.5		6.5	2.5	6.0	3.0	3.0		9.5	3.0			4.5		5.0			4.5			3.5		
13-14	4.5		8.0	4.0					10.5			5.0		2.5	6.5	2.0		6.0					
14-15	4.5	7.0		5.5	5.5	4.5							5.5			3.5	2.5	7.0	8.0				
15-16	4.5		2.5	7.0						6.0	6.0	6.0				5.0	4.0		3.5		9.0		
16-17	4.5		4.0	8.5	4.5	6.0		4.0		3.5			6.5		2.5	6.5	5.0				4.5		
17-18	5.0		5.5		9.0				3.0		4.5	6.5	2.0		4.0		6.5	2.0					
18-19	5.0		7.5	3.0	3.5	7.5	6.0		4.0			2.5			5.5		7.5	3.5		10.0			9.0
19-20	5.0			4.5	8.0				5.0	6.5	2.5		2.5	1.5	7.0	2.5		4.5	5.5		10.0		
20-21	5.0		2.0	6.0	3.0				6.5	4.0		3.0		6.5		4.0		5.5			5.0		
21-22	5.0		3.5	7.5	7.5				7.5				3.5			5.5	2.5	7.0					
22-23	5.0		5.0		2.0				9.0			4.0			3.0	7.0	4.0						
23-24	5.0		6.5	2.0	6.5	3.0	3.0		10.0	7.0			4.5		4.0		5.0		7.5	8.0	10.5		4.5
24-25	5.0		8.0	3.5						4.5	6.0	5.0			5.5		6.0	2.0	3.0		6.0		
25-26	5.0			5.0	5.5	4.5		8.5		2.0			5.5		7.0	3.0	7.5	3.0					
26-27	5.0		2.5	6.5							4.0	6.0		5.5		4.5		4.5					
27-28	5.0		4.0	8.0	5.0	6.0			2.0	7.5			6.5			6.0		5.5					
28-29	5.0		5.5		9.0				3.5	4.5	2.5	7.0	2.0		3.0	7.5	2.5	6.5	5.0	5.5	6.5		
29-30	5.0		7.0	3.0	4.0	7.5	6.0		4.5	2.0		2.5			4.5		3.5	8.0					

	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			10.0		8.0	7.5
1- 2			9.0			
2- 3			8.0			8.5
3- 4			6.5		4.0	
4- 5			5.5	3.0	7.5	9.5
5- 6			4.5	6.5	10.5	
6- 7	3.0		3.0	10.0		
7- 8					3.5	3.5
8- 9					7.0	
9-10	5.5				10.5	4.5
10-11			10.0			
11-12		10.5	9.0		3.5	6.0
12-13	8.0		7.5	3.0	6.5	
13-14		9.5	6.5	6.0	10.0	7.0
14-15			5.5	9.5		
15-16	10.5	8.0	4.0			8.5
16-17			3.0		6.0	
17-18		6.5			9.5	9.5
18-19						
19-20		5.5				11.0
20-21			10.0		6.0	3.0
21-22		4.0	8.5	6.0	9.0	
22-23			7.5	9.5		4.5
23-24	4.5	3.0	6.5			
24-25			5.5		5.5	5.5
25-26			4.0		8.5	
26-27	7.0		3.0			7.0
27-28						
28-29					5.0	8.0
29-30	9.5		11.0	5.5	8.0	

AAVSO Eclipsing Binary Ephemeris for July 2020 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	RY AQR	CX AQR	CZ AQR	XZ AQL	OO AQL	OO AQL	V342 AQL	V343 AQL	V346 AQL	SS ARI	SS ARI	AR AUR
MAX	9.3	8.8	11.2	11.6	10.0	9.3	9.3	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	6.0
MIN	10.2	11.0	14.1	12.6	13.0	10.2	10.2	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	6.7
DUR	3	11	8	4	3	3	3	4	3	4	4	5	3	3	7	3	3	7	4	4	3	3	5
TOT		2																3					
							(S)										(S)					(S)	(S)
0- 1	6.5			8.0	7.5	8.0	4.0		10.5							7.5				2.0		9.0	
1- 2						7.5	3.5		9.0	6.5		11.0	5.5			7.5				5.0	9.5		
2- 3	4.0			10.0		7.5	3.5		7.0				8.0	8.0		8.0	2.0			7.5			
3- 4	10.0					7.5	3.5		5.5			10.0	11.0			8.5	2.5			10.0			
4- 5					9.5	7.5	3.5		3.5	7.5						8.5	2.5						
5- 6	7.5			4.5		7.0	3.5	11.0	2.0			9.5				9.0	3.0						
6- 7						7.0	3.0	11.0	11.0		5.5		5.5			9.5	3.0		11.0				
7- 8	4.5			7.0		7.0	3.0	10.5	9.5	9.0	6.0	8.5	8.0			9.5	3.5					7.0	
8- 9	11.0				11.0	7.0	3.0	10.0	7.5		6.0		11.0	9.0		10.0	4.0	8.5	7.0		7.0		
9-10	2.0			9.0		7.0	3.0	10.0	6.0		6.5	8.0			3.0	10.5	4.0					7.5	
10-11	8.0					6.5		9.5	4.0	10.0	6.5					10.5	4.5		3.5		8.0		
11-12				11.0		6.5		9.0	2.0		7.0	7.0	5.5		6.5	11.0	5.0			3.5		8.5	
12-13	5.5					6.5		9.0		6.0	7.0		8.5				5.0			6.5	8.5		
13-14						6.5		8.5	9.5		7.5	6.0	11.0		9.5		5.5			9.0		9.0	
14-15	2.5			5.5		6.5		8.0	8.0		7.5			10.0			6.0				9.5		
15-16	9.0				6.0	6.0		8.0	6.0	7.0	8.0	5.5		6.5			6.0	3.5				9.5	
16-17				8.0		6.0		7.5	4.5		8.0		5.5				6.5						
17-18	6.0	6.5				6.0		7.0	2.5		8.5	4.5	8.5				7.0						
18-19				10.0		6.0		7.0		8.5	8.5		11.0				7.0						
19-20	3.5				7.5	6.0		6.5	10.0		9.0	4.0					7.5		8.5				
20-21	9.5					5.5		6.0	8.5		9.0			11.0			8.0					6.5	
21-22		9.5		4.5		5.5		6.0	6.5	9.5	9.5		6.0	7.5		2.0	8.0		5.0	2.5	7.0		
22-23	7.0					5.5		5.5	5.0		9.5		8.5			2.5	8.5			5.5		7.5	
23-24				7.0	9.5	5.5		5.0	3.0	5.5	10.0					2.5	9.0			8.0	7.5		
24-25	4.0					5.5		5.0		11.0	10.0					3.0	9.0			10.5		8.0	
25-26	10.5			9.0		5.0		4.5	10.5		10.5					3.5	9.5	7.5			8.5		10.0
26-27			10.5			5.0		4.0	9.0	7.0	10.5		6.0		5.5	3.5	10.0					9.0	
27-28	7.5			11.0	11.0	5.0		4.0	7.0		11.0		8.5	8.5		4.0	10.0				9.0		
28-29						5.0		3.5	5.0		11.0				9.0	4.5	10.5					9.5	
29-30	5.0		10.0			5.0		3.0	3.5	8.0						4.5	10.5						
30-31				5.5		4.5		3.0								5.0	11.0		10.5				

	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	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS
MAX	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	10.5	6.4	7.3	10.2	11.8	11.8
MIN	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	11.6	7.8	8.4	12.2	12.5	12.5
DUR	4	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	5	4	4	4	4	3	3
TOT				(S)		(S)		(S)		(S)	(S)					(S)							(S)
0- 1	9.5					5.5		4.5	3.5	7.0			2.5			4.0							4.0
1- 2						4.5	7.0	3.0		4.5			7.0	5.0	7.5				3.0			7.0	3.0
2- 3						4.0	6.0	2.0	5.5						2.0	11.0		6.0	8.0		5.0	6.0	2.0
3- 4					7.0	3.5	4.5		2.5	6.0	3.5		2.0			5.5						4.5	
4- 5					6.5	2.5	3.5	7.5		3.5			6.5		9.0		4.0					3.5	7.5
5- 6	9.0			11.0	6.0	2.0	2.5	6.0	4.5				10.5	4.5	3.0							2.5	6.5
6- 7					5.5			5.0	2.0	5.5		4.5				6.5				10.5	7.5		5.5
7- 8					4.5			4.0	6.5	3.0			5.5		10.0				2.5				4.5
8- 9					4.0		6.5	2.5	4.0		3.0		10.0		4.5				7.0	6.0		7.0	3.5
9-10					3.5	7.0	5.5			5.0				4.5		8.0		9.0				6.0	2.5
10-11			10.5		2.5	6.5	4.0		6.0	2.5			4.5			2.5					10.0	5.0	
11-12					2.0	6.0	3.0	7.0	3.0	7.0			9.0		6.0							4.0	
12-13						5.5	2.0	5.5		4.0						9.5		5.0				3.0	7.0
13-14						4.5		4.5	5.0		3.0		4.0	4.0		4.0			2.0		3.5	2.0	6.0
14-15		10.0				4.0	7.0	3.5	2.5	6.0			8.5		7.5		8.5		6.5				4.5
15-16				10.0	7.0	3.5	6.0	2.0	7.0	3.5						11.0						7.5	3.5
16-17					6.5	2.5	5.0		4.5			2.5	3.0			5.0						6.5	2.5
17-18					6.0	2.0	3.5	7.5	2.0	5.5			7.5	3.5	8.5					7.5	6.0	5.5	
18-19					5.0		2.5	6.0	6.5	3.0	3.0				3.0							4.5	
19-20					4.5			5.0	4.0			10.0	2.0			6.5		8.0		3.0		3.5	7.0
20-21			9.5		4.0			4.0		5.0			6.5		10.0				6.0			2.5	6.0
21-22					3.5	7.0	6.5	2.5	5.5	2.0			11.0	3.0	4.5		3.0		11.0		8.5		5.0
22-23					2.5	6.5	5.5		3.0	6.5				11.0		8.0		4.0					4.0
23-24					2.0	6.0	4.0			4.0	2.5		6.0			2.0						7.0	3.0
24-25						5.0	3.0	7.0	5.0				10.0		5.5						2.0	6.0	2.0
25-26				9.0		4.5	2.0	5.5	2.5	6.0				3.0		9.0					11.0	4.5	
26-27						4.0		4.5	7.0	3.5			5.0	10.5		3.5		10.5	5.5	9.0		3.5	7.5
27-28		10.5			7.0	3.5	7.0	3.5	4.5				9.5		7.0				10.0			2.5	6.5
28-29					6.5	2.5	6.0	2.0	1.5	5.5	2.5					10.5				4.5	4.5		5.5
29-30					6.0	2.0	5.0		6.5	2.5		8.0	4.0	2.5		5.0		7.0					4.5
30-31					5.0		3.5	7.5	3.5				8.5	10.5	8.5							7.0	3.5

	DZ CAS	IR CAS	IS CAS	IV CAS	MM CAS	OR CAS	PV CAS	PV CAS	V364 CAS	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
MAX	11.6	10.8	11.6	11.2	11.3	11.4	10.0	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	11.0	11.0	10.0
MIN	12.3	12.1	12.6	12.5	11.9	12.4	10.6	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1	9.6	14.2	13.2	12.4	10.6	11.6	11.6	10.7
DUR	4	4	5	5	5	4	3	3	4	4	5	4	4	3	3	4	4	5	4	3	3	3	3
TOT												2											
								(S)		(S)					(S)							(S)	
0- 1	6.5			2.0				8.0					10.0	2.5	7.5		9.5	3.0		3.0	5.0	2.0	
1- 2		4.5		2.0		2.5	4.0				11.0		7.5	8.5	3.5		9.5		3.5	5.0	3.5		
2- 3				2.0		8.5		2.0		10.5		10.0	5.0	4.5	10.0		9.0		7.0	7.5	2.5	5.5	
3- 4	10.0	5.5		2.0					5.0				2.5		6.0		8.5	9.5	11.0	9.5		4.0	
4- 5	4.5			2.0							9.5			7.0	2.0		8.5					3.0	2.0
5- 6		6.5		2.0	5.0									3.0	8.0	6.0	8.0				4.5		2.5
6- 7			10.0	2.0	9.0	2.5	10.0		7.0					9.0	4.0		7.5			2.5	3.5		3.0
7- 8	8.0	7.5		2.0		8.0		8.0			8.5	9.5		5.0	10.0		7.5			5.0	2.0	5.0	3.0
8- 9	3.0		6.0	2.0			4.0								6.0		7.0	6.5	2.5	7.0		3.5	3.5
9-10		8.5		2.0				2.0	9.0				10.0	7.0	2.0		6.5		6.5	9.0	5.5	2.5	4.0
10-11			2.0							3.5	7.0		7.5	3.0	8.0		6.5		10.5		4.0		4.5
11-12	6.0	9.5				2.0							5.5	9.0	4.0		6.0				3.0		4.5
12-13		2.0			4.0	7.5						9.5	3.0	5.0		6.5	5.5			2.5	1.5	4.5	5.0
13-14		10.5			8.0		10.0			5.5	5.5				6.0		5.5	4.0		4.5		3.5	5.5
14-15	9.5	3.0						8.0						7.5	2.5		5.0			7.0	5.0	2.0	5.5
15-16	4.5						4.0							3.5	8.5		4.5		2.0	9.0	4.0		
16-17		4.0						2.0		8.0	4.5			9.5	4.5		4.5	10.5	6.0	11.0	2.5	5.5	
17-18			11.0			7.5						9.0		5.5			4.0		10.0			4.0	
18-19	7.5	5.0											10.5		6.5		3.5			2.5		3.0	
19-20	2.5		7.0		3.0					10.0	3.0		8.0	7.5	2.5	6.5	3.5			4.5	4.5	2.0	
20-21		6.0			6.5		10.0		4.5				5.5	3.5	8.5		3.0			6.5	3.5		
21-22	11.0		3.5		10.5			8.0					3.5	9.5	4.5		2.5	7.5		8.5	2.0	5.0	
22-23	6.0	7.0				7.0	4.0				2.0	8.5		5.5			2.5			11.0		4.0	
23-24								2.0	6.5						6.5		2.0		5.0		5.5	2.5	
24-25		8.0												7.5	2.5				9.0	2.0	4.0		
25-26	9.0													4.0	9.0					4.0	3.0		
26-27	4.0	9.0							8.5					10.0	5.0	7.0		5.0		6.5	2.0	4.5	2.0
27-28					5.5	6.5	10.0					8.5	11.0	6.0						8.5		3.5	2.5
28-29		10.0			9.5			8.0					8.5	2.0	7.0					10.5	5.0	2.0	3.0
29-30	7.5	2.5					4.0		10.5		10.5		6.0	8.0	3.0						4.0		3.0
30-31	2.0	11.0	8.5					2.0		5.0			3.5	4.0	9.0				4.5	2.0	2.5	5.5	3.5

	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	W CRV	W 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
MAX	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.6	10.6	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
MIN	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	11.2	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
DUR	3	4	4	2	2	5	4	4	4	4	4	6	5	5	4	4	4	3	4	5	5	3	3
TOT													2										
	(S)		(S)		(S)				(S)	(S)													
0- 1	4.5	2.5		3.0			9.0								3.0	11.0		2.5	2.0				5.5
1- 2	5.0		3.0		3.0		2.5		3.0						9.0	10.5		8.5				3.0	2.0
2- 3	5.5	4.0		2.5				2.0				3.5		8.5		9.5			10.5	5.5		10.0	
3- 4	5.5		4.5	5.0	2.5		7.0				2.0				6.5	9.0	5.0	6.0	9.0				
4- 5		5.5		2.5	5.0											8.0			7.5			8.0	
5- 6				5.0	2.0							3.5			3.5	7.5		3.5	6.0				9.0
6- 7			2.0	2.0	4.5	2.0	4.5								10.0	6.5		10.0	5.0		6.5	6.0	5.5
7- 8		3.0		4.5	2.0			3.0								6.0	4.5		3.5				2.0
8- 9			3.5		4.5		9.0		2.5			3.5			7.0	5.0		7.5	2.0			4.0	
9-10		4.5		4.0			2.5									4.5						11.0	
10-11			5.0		4.0										4.5	3.5		5.0	10.5			2.5	
11-12				4.0			6.5					3.0			10.5	3.0	4.5	11.0	9.0			9.0	9.5
12-13					3.5					3.0				7.5		2.0		2.5	7.5				6.0
13-14			2.5	3.5											8.0			8.5	6.5			7.0	2.5
14-15		3.0			3.5		4.5	3.0				3.0							5.0				
15-16	2.0		4.0	3.0					2.0	3.0					5.0		4.5	6.0	3.5			5.0	
16-17	2.5	5.0			3.0		8.5												2.0	10.0			
17-18	3.0		5.5	3.0			2.0					3.0	5.0		2.5			3.5			6.0	3.5	9.5
18-19	3.0				2.5					2.5					8.5			9.5	10.5			10.0	6.5
19-20	3.5	2.0		2.5	5.0		6.5										4.5		9.0	6.5			3.0
20-21	4.0		3.0	5.0	2.5				3.0			3.0			6.0			7.0	7.5			8.0	
21-22	4.5	3.5		2.0	5.0			2.5		2.5									6.5				
22-23	4.5		4.5	4.5	2.0		4.0							6.5	3.0			4.5	5.0	2.5		6.5	
23-24	5.0	5.0		2.0	4.5	8.5						3.0			9.0		4.5	11.0	3.5				10.0
24-25	5.5			4.5			8.5			2.0								2.0	2.0			4.5	6.5
25-26			2.0		4.0		2.0								6.5			8.5					3.0
26-27		2.5		4.0								3.0	8.5						10.5			2.5	
27-28			3.5		4.0		6.0		3.0	2.0					3.5		4.5	6.0	9.0			9.5	
28-29		4.0		3.5				2.0							10.0				7.5		5.5		
29-30			5.0		3.5							2.5						3.0	6.5			7.5	10.5
30-31		5.5		3.5		6.0	4.0								7.0			9.5	5.0				7.0

	V456 CYG	V466 CYG	V466 CYG	V477 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	TZ ERI	SZ HER	TU HER	UX HER	CC HER	CT HER
MAX	10.8	10.8	10.8	8.3	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	9.8	10.2	10.6	8.9	9.5	9.9
MIN	11.9	11.6	11.6	9.2	8.7	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12.6	12.0	13.4	9.8	12.8	11.2
DUR	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	4	5	5	4	4
TOT							2							1				1		1			
			(S)		(S)											(S)							
0- 1			10.0	2.0									10.5								2.0		
1- 2		3.0				4.0			2.0		7.0	9.0				10.0			9.0				3.0
2- 3				10.5		7.5		6.0	6.5	10.0			2.0						5.0				
3- 4			5.0		3.5	10.5	9.5			5.0			4.5							5.5	4.5		
4- 5	10.0										10.5	2.0	7.0				5.0					7.0	
5- 6	7.5	7.0				4.0		3.0			5.0	11.0	9.5				9.5						
6- 7	4.5					7.0				9.0				6.5	7.5				7.0		7.0		
7- 8	2.0		9.0	3.0		10.5				4.0									2.5				
8- 9		1.5					5.0		5.5		8.5	4.0	3.5										6.5
9-10		11.0				3.5			10.0		3.0		6.0	2.0							9.0		
10-11			4.0		4.5	7.0				8.5			8.5				4.5		9.0				
11-12						10.5				3.5			11.0			5.0	9.5		5.0			5.5	
12-13	10.5	6.0									6.5	5.5								7.0			
13-14	8.0					3.5							2.5										
14-15	5.0		8.0	4.0		7.0			4.5	7.5			5.0										
15-16	2.5					10.5			9.0	2.5	9.5		7.5						7.0				
16-17		10.0									4.5	7.5	10.0		2.5		4.5		2.5				
17-18			3.0		5.5	3.5											9.5				3.0		5.0
18-19						7.0				6.5												4.0	
19-20		5.0				10.0					7.5		4.0		8.5				9.0	2.5			
20-21	11.0								3.5			9.0	6.5	7.5					5.0		5.5		
21-22	8.5		7.0	5.0		3.5			8.0	11.0			9.0							9.0			
22-23	5.5					6.5		8.5		6.0	10.5						4.5						
23-24	3.0	9.0				10.0					5.5	2.5		3.0			9.0				8.0		
24-25			2.0		6.5							11.0	3.0			6.0			7.0				8.5
25-26						3.0		5.5		10.0			5.5					11.0	2.5			2.5	
26-27		4.0				6.5			2.5	5.0	8.5		8.0								10.0		3.0
27-28						10.0	10.5		7.0		3.5	4.0	10.5										
28-29			6.0	6.0				2.5									4.5		9.0	4.0			
29-30	9.0					3.0				9.0			2.0		3.5		9.0		5.0				
30-31	6.0	8.0				6.5				4.0	6.5		4.5							10.5		7.0	

	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO	SS LIB	DELT LIB	UZ LYR	EW LYR	FL LYR	U OPH	SX OPH	V508 OPH	V839 OPH	1010 OPH	ET ORI	U PEG	U PEG	TY PEG	AQ PEG
MAX	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4	10.4	4.8	9.8	11.2	8.7	5.8	10.5	10.1	8.8	6.2	11.2	9.7	9.7	10.5	10.3
MIN	10.0	10.0	12.3	9.5	11.0	11.0	12.7	12.7	11.3	5.9	11.0	13.6	9.5	6.5	11.2	10.7	9.4	7.0	12.4	10.5	10.5	12.6	13.0
DUR	3	3	4	4	5	5	5	4	6	7	5	5	4	5	5	3	3	4	5	3	3	6	12
TOT																							4
		(S)				(S)															(S)		
0- 1	3.5	7.0		9.5					2.5		9.5		3.5			6.5	9.0	4.5		5.5			
1- 2	2.5	6.0				9.0								6.5		7.5	4.5			8.5			
2- 3		5.0			4.0						7.0	10.5	7.5			8.0		4.0			7.0		
3- 4		4.0	3.5														5.5			5.5			
4- 5	7.5	3.5	5.5			11.0				4.5	4.5	9.0						3.5		8.5			
5- 6	6.5		7.0	5.0	6.0											2.5	6.5				7.0		
6- 7	6.0		9.0									8.0		7.5		3.0	2.0	3.0	11.0	5.5			
7- 8	5.0		10.5													4.0	7.5			8.5			
8- 9	4.0	7.5		10.0	8.0							6.5				5.0	3.5	3.0			7.0		
9-10	3.0	6.5				2.0										5.5	8.5			5.5			
10-11		5.5							4.0			5.5				6.5	4.5	2.5		8.5		5.5	
11-12		4.5			10.0					4.0				8.0		7.5	10.0				7.0		
12-13		4.0				4.0						4.0				8.0	5.5	2.0		5.5			
13-14	7.0	3.0		5.5									5.0							8.5		8.0	
14-15	6.0							2.0				3.0					6.5				7.0		
15-16	5.5					6.0	2.5						9.0			2.5	2.0			5.5			
16-17	4.5			10.5										9.0		3.0	7.5			8.5		10.0	
17-18	3.5	7.0	2.5								10.0					4.0	3.0				7.0		
18-19	2.5	6.0	4.5			8.0				3.5						5.0	8.5			5.5			
19-20		5.0	6.5		3.0						7.5					5.5	4.5			8.5			4.0
20-21		4.0	8.0						5.5							6.5	10.0				7.0		
21-22	7.5	3.5	10.0	6.0		10.0					5.0				2.5	7.5	5.5			5.5			
22-23	6.5				5.0											8.0				8.5			
23-24	5.5								3.0		2.0			2.0	4.0		6.5				7.0		
24-25	5.0			11.0									2.5				2.0			5.5			
25-26	4.0	7.5			7.0					3.0					5.5	2.5	7.5	7.5		8.5			
26-27	3.0	6.5											6.5			3.0	3.0				7.0		
27-28		5.5													7.0	4.0	8.5	7.0		5.0			
28-29		4.5			9.0								11.0	2.5		5.0	4.5			8.0			
29-30		3.5		6.5		3.0										5.5	9.5	7.0			6.5		
30-31	7.0	3.0														6.5	5.5			5.0			6.0

	BB PEG	BB PEG	BX PEG	DI PEG	GP PEG	Z PER	RT PER	ST PER	XZ PER	BETA PER	Y PSC	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RZ TAU	TY TAU	WY TAU	V TRI	X TRI	RV TRI
MAX	10.6	10.6	10.9	9.6	10.2	9.9	10.6	9.7	10.6	2.2	9.0	6.4	6.4	12.3	10.6	11.1	11.1	10.5	11.5	11.5	10.9	8.9	11.4
MIN	11.2	11.2	11.5	10.8	11.0	12.4	12.0	13.2	12.7	3.5	12.0	9.1	7.6	13.3	12.1	11.7	11.7	11.2	12.0	11.7	11.9	12.0	12.5
DUR	3	3	3	2	4	6	4	5	4	8	7	6	5	4	4	4	4	3	2	4	4	4	4
TOT						2		1				2											
		(S)															(S)						
0- 1		7.0	5.5													4.0					9.0		6.0
1- 2	4.5			7.0										3.5		5.0							
2- 3	6.5		5.0					8.0			7.5			6.5		6.0							
3- 4		4.5		10.5			9.0		9.0	8.0					7.5	6.5					7.0		6.5
4- 5		6.5	4.0										3.0		4.5	7.5					11.0		
5- 6	4.0	8.5										2.0	7.5	2.0		8.0	2.0		10.5				
6- 7	6.0		3.0	6.5										5.0			2.5						6.5
7- 8	8.0	4.0	6.0											8.0			3.5				9.5		
8- 9		6.0	2.0	10.0			11.0										4.0			10.5			
9-10	3.5	8.0	5.0				7.5										5.0						7.0
10-11	5.5							6.5	7.0					3.5	8.5		5.5				7.5		
11-12	7.5	3.5	4.0	6.5					10.5				5.5	6.5	5.5		6.5						
12-13		5.5											10.0		2.5		7.5						7.5
13-14		7.5	3.5	9.5												2.0	8.0				6.0	11.0	
14-15	5.0		6.0				10.0							2.5		2.5					10.0	10.0	
15-16	7.0		2.5				6.0					5.5		5.5		3.5						9.5	7.5
16-17		4.5	5.5	6.0										8.5		4.0						8.5	
17-18		6.5									9.0		3.5			5.0				10.5	8.0	8.0	
18-19	4.5		4.5	9.0					8.5				7.5		6.5	5.5						7.5	8.0
19-20	6.5													4.0	3.5	6.5			10.5			6.5	
20-21	8.5	4.0	3.5				8.5							7.0		7.0		9.5			6.5		
21-22		6.0	6.5	5.5												8.0	2.0				10.5		8.5
22-23	4.0	8.0	2.5														2.5						
23-24	6.0		5.5	8.5						9.5				2.5			3.5						
24-25	8.0	3.5											5.5	5.5			4.0				8.5		9.0
25-26		5.5	4.5		11.0		11.0					9.0	10.0	8.5	7.0		5.0	9.5					
26-27	3.5	7.5		5.0	10.5	6.0	7.0		10.0	6.5					4.0		5.5			11.0			
27-28	5.5		4.0		9.5												6.5				7.0		9.0
28-29	7.5		6.5	8.5	9.0									4.5			7.0				11.0		
29-30		5.0	3.0		8.5	7.0								7.5		2.0	8.0						
30-31		7.0	6.0		8.0								3.5			2.5							9.5

	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)					
0- 1	5.0			4.5	8.5				6.0				3.0			2.0	5.0						10.5
1- 2	5.0			6.0	3.5				7.0			3.5				3.5	6.0	2.0					
2- 3	5.0		3.0	7.5	7.5			6.0	8.0	5.0			3.5	5.0		5.0		3.0			7.5		
3- 4	5.0		4.5		2.5				9.5	2.5		4.0			2.0			4.0	2.5	3.5	3.0		
4- 5	5.0		6.0	2.0	7.0	3.0	3.0		10.5				4.5		3.5			5.5					
5- 6	5.0		7.5	3.5							4.0				5.0		2.5						6.0
6- 7	5.0			5.0	6.0	4.5				5.5						2.5	3.5				8.0		
7- 8	5.0		2.0	6.5						3.0	2.5					4.0	4.5		4.5		3.5		
8- 9	5.0		4.0	8.0	5.0				3.0					4.0		5.5	6.0						
9-10	5.0		5.5					3.5	4.0				2.0		2.5			3.0					
10-11	5.5		7.0	2.5	4.5				5.0			2.5			4.0			4.0			9.0		2.0
11-12	5.5			4.0	8.5			11.0	6.5	3.0			3.0		5.5			5.0			4.5		
12-13	5.5			5.5	3.5				7.5			3.5				3.0	2.0		2.5				
13-14	5.5		3.0	7.0	8.0				9.0				4.0			4.5	3.5						
14-15	5.5		4.5		3.0				10.0		4.0	4.5		3.5			4.5				10.0		
15-16	5.5		6.0		7.0	3.0	3.0		11.0	3.5			4.5		3.0		5.5			10.0	5.0		
16-17	5.5		7.5	3.0	2.0						2.5				4.5			2.5	4.5				
17-18	5.5			5.0	6.5	4.5										1.5		4.0					7.5
18-19	5.5		2.0	6.5				8.5	2.0							3.0		5.0			10.5		
19-20	5.5		3.5	8.0	5.5				3.5	4.0						4.5	2.0				6.0		
20-21	5.5		5.0						4.5				2.0	2.5	2.0		3.0			8.0			
21-22	5.5		6.5	2.5	4.5				5.5			2.5			3.5		4.5		2.0				
22-23	5.5		8.0	4.0	9.0				7.0				3.0		5.0		5.5						3.5
23-24	5.5			5.5	4.0				8.0	4.5	4.0	3.5				2.0		2.5			6.5		
24-25	5.5	2.5	2.5	7.0	8.0				9.5	1.5			4.0			3.5		3.5			2.0		
25-26	5.5		4.0		3.0			6.0	10.5		2.0	4.5				5.0		5.0	4.0	5.5			
26-27	5.5		6.0		7.5	3.0	3.0						5.0	2.0	2.5		2.0					2.0	
27-28	5.5	4.0	7.5	3.0	2.5					4.5					4.0		3.0				7.5		
28-29	5.5			4.5	6.5	4.5				2.0					5.5		4.0				3.0	2.5	
29-30	5.5		2.0	6.0					2.5							2.5	5.5						9.0
30-31	5.5		3.5	7.5	6.0				4.0							4.0		2.5		3.5		3.5	

	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			10.0	9.0		9.5
1- 2			8.5			1.5
2- 3			7.5		4.5	10.5
3- 4			6.5		8.0	3.0
4- 5			5.0		11.0	
5- 6			4.0			4.0
6- 7			3.0	2.0	4.0	
7- 8	4.0			5.5	7.5	5.5
8- 9				8.5	10.5	
9-10			11.0			6.5
10-11	6.5		9.5		3.5	
11-12			8.5		7.0	8.0
12-13			7.5		10.5	
13-14	9.0		6.0			9.0
14-15			5.0		3.5	
15-16			4.0	5.0	6.5	10.5
16-17			2.5	8.5	10.0	2.5
17-18						
18-19		10.0			3.0	4.0
19-20			10.5		6.0	
20-21		8.5	9.5		9.5	5.0
21-22	3.0		8.5			
22-23		7.5	7.5		2.5	6.5
23-24			6.0	5.0	6.0	
24-25	5.5	6.0	5.0	8.0	9.0	7.5
25-26			4.0			
26-27		4.5	2.5		2.0	9.0
27-28	8.0				5.5	
28-29		3.5			8.5	10.0
29-30			10.5			2.5
30-31	10.5	2.0	9.5			

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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)						(S)	
0- 1	2.5					4.5		2.5		11.0	4.0		6.0			5.5				1.5		5.5	
1- 2	8.5		9.5	8.0		4.5		2.0		9.0	9.0		8.5			5.5		2.5	6.5	4.5	6.0		
2- 3						4.5		2.0		7.5			11.5	9.5		6.0				7.0		6.5	
3- 4	5.5			10.0	6.0	4.0		1.5		5.5	5.0			6.0		6.5			3.0	9.5	7.0		
4- 5			9.0	2.5		4.0				4.0	10.5		3.5			6.5						7.0	8.5
5- 6	3.0					4.0				2.0			6.0			7.0					7.5		
6- 7	9.0			4.5		4.0	8.0				6.5		9.0			7.5						8.0	
7- 8			8.0		7.5	4.0	8.0			9.5			11.5			7.5	1.5				8.0		
8- 9	6.5			7.0		3.5	7.5			8.0				10.5	1.5	8.0	2.0					8.5	
9-10						3.5	7.5		11.5	6.0	7.5		3.5	7.0		8.0	2.0				9.0		10.0
10-11	4.0		7.5	9.0		3.5	7.5		11.0	4.5			6.0		5.0	8.5	2.5					9.5	
11-12	10.0				9.5	3.5	7.5		10.5	2.5	3.5		9.0			9.0	3.0	6.5		3.0	9.5	5.0	
12-13				11.0		3.5	7.5		10.5		9.0		11.5		8.5	9.0	3.0		8.0	6.0	5.0		
13-14	7.0		7.0	3.5		3.0	7.0		10.0	10.0						9.5	3.5			8.5		5.5	
14-15						3.0	7.0		9.5	8.5	4.5		3.5	11.5		10.0	4.0		4.5		6.0		11.0
15-16	4.5	3.0		5.5	11.0	3.0	7.0		9.5	6.5	10.0	3.5	6.5	8.0		10.0	4.0					6.0	
16-17	10.5		6.0			3.0	7.0		9.0	4.5		4.0	9.0	4.5			4.5				6.5		
17-18	2.0			8.0		3.0	7.0		8.5	3.0	6.0	4.0					5.0					7.0	
18-19	8.0				4.5	2.5	6.5		8.5		11.0	4.5					5.0				7.5		
19-20		6.0	5.5	10.0		2.5	6.5		8.0	10.5		4.5	3.5				5.5					7.5	
20-21	5.5			2.5		2.5	6.5		7.5	8.5	7.0	5.0	6.5				5.5				8.0		
21-22	11.5					2.5	6.5		7.5	7.0		5.0	9.0	9.0			6.0			2.0		8.5	
22-23	2.5		5.0	4.5	6.0	2.5	6.0		7.0	5.0		5.5		5.5			6.5			5.0	8.5		
23-24	8.5	9.0				2.0	6.0		6.5	3.5	8.5	5.5					6.5		10.0	7.5		9.0	
24-25				7.0		2.0	6.0		6.5	1.5		6.0	4.0				7.0			10.0	9.5	4.5	
25-26	6.0		4.0			2.0	6.0		6.0	11.0	4.5	6.0	6.5		4.5	1.5	7.5		6.0		5.0		
26-27				9.0	7.5	2.0	6.0		5.5	9.0	9.5	6.5	9.0			1.5	7.5					5.5	
27-28	3.5					1.5	5.5		5.5	7.5		6.5		10.0	7.5	2.0	8.0		2.5		5.5		
28-29	9.5		3.5	11.0		1.5	5.5		5.0	5.5	5.5	7.0		6.5		2.5	8.5	5.5				6.0	
29-30				3.5		1.5	5.5		4.5	4.0	11.0	7.0	4.0			2.5	8.5				6.5		
30-31	7.0				9.5	1.5	5.5		4.5	2.0		7.5	6.5			3.0	9.0					6.5	

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	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	RT CMA	XZ CMI
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	11.4	9.7
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	12.9	10.2
DUR	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	5	3
TOT	(S)		(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)		
0- 1										4.5		2.5	6.5		4.5					3.0			
1- 2			10.5							4.0		1.5	5.0	5.5	2.0			3.5			6.5		
2- 3										3.5			4.0	3.0	6.5	2.0		7.5	2.0	10.0			
3- 4		10.0								2.5		6.5	3.0		4.0				10.0	4.0			
4- 5									8.0	2.0		5.5	1.5	5.0	1.5			2.5			7.5		
5- 6			10.0							1.5	5.0	4.5		2.5	6.0			7.0		11.0	2.0		
6- 7							11.5	11.5			4.5	3.0		7.0	3.5			11.5	2.0	5.5			11.5
7- 8		10.0									4.0	2.0	6.0	4.0		2.0		1.5	9.5		9.0	11.5	
8- 9											3.0		4.5	1.5	5.0		6.0	6.0			3.5		
9-10			9.5				10.5	7.5			2.5		3.5	6.0	2.5			10.5		7.0			
10-11						11.0					2.0	6.0	2.5	3.5	7.0				1.5		10.5		
11-12		9.5							11.0	5.0	1.5	5.0			4.5			5.0	9.5		4.5		
12-13							9.0			4.5		3.5		5.5	2.0	2.0		9.5		8.0			
13-14			9.5							4.0		2.5	6.5	3.0	6.5					2.5			
14-15									7.0	3.0		1.5	5.0		4.0			4.5			6.0		
15-16		9.0				10.5	8.0			2.5			4.0	5.0				9.0	9.0	9.5			
16-17								10.5		2.0		6.5	3.0	2.0	6.0					4.0			
17-18										1.5	5.0	5.5	1.5	6.5	3.0	1.5		3.5			7.5		
18-19											4.5	4.5		4.0			4.0	8.0		11.0	2.0		
19-20							11.5				4.0	3.0		1.5	5.0				8.5	5.5			
20-21						10.0					3.0	2.0	6.0	6.0	2.5			2.5			9.0		
21-22									10.0		2.5		4.5	3.5	7.0		11.0	7.0			3.0		
22-23							10.5				2.0		3.5		4.5	1.5				6.5			
23-24					8.5					5.0		6.0	2.5	5.5	2.0			2.0	8.0		10.0		
24-25										4.5		5.0		2.5	6.5			6.5			4.5		
25-26				10.5		9.5	9.5			4.0		4.0			3.5			11.0		8.0			
26-27								9.5		3.0		2.5	6.5	4.5						2.5	11.5		
27-28										2.5		1.5	5.5	2.0	5.5			5.5	8.0		6.0		
28-29	8.5	11.5					8.0			2.0			4.0	6.5	3.0		2.0	10.0		9.5			
29-30											5.0	7.0	3.0	4.0						3.5		11.0	
30-31			11.5			9.0					4.5	5.5	2.0	1.5	5.0			4.5			7.0		

	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	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP
MAX	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	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5
MIN	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	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1	9.6
DUR	4	5	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3	3	4
TOT																			2				
								(S)							(S)		(S)					(S)	
0- 1		7.5					6.0	2.5		3.5										1.5		5.0	
1- 2			3.5	5.0		7.0	5.0	1.5	11.0		4.5		6.0					9.5	8.0		6.0		
2- 3				9.5			4.0		5.5	4.5							7.0				2.0	7.0	7.5
3- 4							3.0	7.0				4.5		10.5		1.5					8.0	3.0	
4- 5					10.5		2.0	6.0		5.5		8.0			8.0			8.0			4.0	9.0	
5- 6						9.5		5.0	9.0					4.5			9.0			11.0		5.0	
6- 7					6.0		7.5	3.5	4.0	6.5			5.5		2.0	3.5			7.5	9.0	6.5	1.5	
7- 8		2.5		4.5			6.5	2.5					11.5					7.0		6.5	2.5	7.5	
8- 9			6.0	9.0	1.5	3.0	5.5	1.5		7.5							11.5			4.0	8.5	3.5	
9-10							4.5		7.0							6.0				1.5	4.5	9.5	7.5
10-11	11.5						3.5	7.0	2.0	8.5	9.5	3.0		10.5				5.5				5.5	
11-12			2.5				2.5	6.0				7.0	5.5		8.0				7.5		6.5	1.5	
12-13						5.5	1.5	5.0	10.5	9.5	6.0	10.5	11.0	4.5		8.0					2.5	7.5	
13-14				4.0				4.0	5.5	2.0					2.0		2.5	4.5			8.5	3.5	
14-15				8.5			7.0	3.0		10.5	2.0									11.5	4.5	9.5	
15-16			9.0		7.5		6.0	2.0		3.0						10.0				9.0		5.5	
16-17						7.5	5.0		8.5	11.5			5.0				4.5	3.0	7.0	6.5	6.5	1.5	8.0
17-18		6.5			3.0		3.5	7.5	3.5	4.0		2.0	11.0	10.5						4.5	3.0	8.0	
18-19			5.5				2.5	6.5				5.5			8.0					2.0	9.0	4.0	
19-20				3.0		1.5	1.5	5.5		5.0		9.5		4.5			6.5	2.0			5.0	10.0	
20-21				8.0		10.0		4.5	7.0						2.0							6.0	
21-22			1.5				7.0	3.5	1.5	6.0	10.5		4.5						6.5		7.0	2.0	
22-23							6.0	2.5					10.5				8.5				3.0	8.0	
23-24						4.0	5.0	1.5	10.0	7.0	7.0					3.0					9.0	4.0	8.0
24-25		1.5			9.0		4.0		5.0					10.5						9.5	5.0		
25-26			8.0	2.5			3.0	7.0		8.0	3.0	4.5			8.0		10.5			7.0		6.0	
26-27				7.5	4.5		2.0	6.0				8.5	4.0	4.5		5.0		10.5	6.5	4.5	7.0	2.0	
27-28						6.0		5.0	8.5	9.0			10.0		2.0					2.5	3.0	8.0	
28-29			4.5				7.5	3.5	3.0	1.5											9.5	4.5	
29-30							6.5	2.5		10.0						7.0		9.5			5.5		
30-31							5.5	1.5		2.5							1.5				1.5	6.5	8.5

	DL CEP	DV CEP	EG CEP	SS CET	RW COM	RW COM	RZ COM	RZ COM	SS COM	SS COM	CC COM	CC COM	U CRB	RW CRB	RV CRV	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG
MAX	12.4	11.6	9.6	9.4	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	9.0	7.0	9.3	9.9	10.7	11.8	9.4	11.0	10.3
MIN	13.2	12.4	10.6	13.0	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	10.0	7.6	11.8	13.2	12.0	12.8	10.5	11.8	10.8
DUR	5	4	3	5	3	3	3	3	4	4	2	2	5	4	4	6	5	5	4	4	4	3	4
TOT				2													2						
						(S)		(S)		(S)		(S)			(S)								
0- 1	2.5	8.5	4.0		1.5				1.5			3.0								11.5	4.5		3.5
1- 2			6.0			3.0				2.0	3.0					2.5		5.0	4.5	10.5		7.0	2.0
2- 3			8.5			2.0			3.0			3.0		1.5	1.5				10.5	10.0			
3- 4	9.0		10.5		3.5					4.0	2.5								1.5	9.0		4.5	10.5
4- 5					2.5			1.5				2.5		6.0		2.5			8.0	8.5	4.5	10.5	9.0
5- 6			1.5			4.0		2.0			2.5									7.5		2.0	8.0
6- 7		4.0	4.0			2.5		2.0				2.0	3.5						5.0	7.0		8.0	6.5
7- 8		8.0	6.0	11.5		1.5		2.5	2.0		2.0			3.5		2.5			11.5	6.0			5.0
8- 9	6.0		8.0		3.0			3.0		2.5		2.0							2.5	5.5	4.5	5.5	3.5
9-10			10.0		2.0			3.0	3.5		1.5						2.0		8.5	4.5			2.0
10-11				11.0		3.5		3.5				1.5		1.5		2.5				4.0		3.0	
11-12			1.5			2.5					1.5							4.0	6.0	3.0		9.5	10.5
12-13			3.5											5.5						2.5	4.0		9.0
13-14	3.5	3.0	5.5	10.5	2.5					1.5			1.5			2.5			3.0	1.5		7.0	8.0
14-15		7.0	8.0		1.5				2.5										9.5				6.5
15-16		11.0	10.0			3.0	1.5			3.0		3.5		3.5								4.0	5.0
16-17	10.0			9.5		2.0	2.0				3.0					2.0			6.5		4.0	10.5	3.5
17-18					3.5		2.0					3.0										1.5	2.0
18-19			3.5		2.5		2.5				3.0						5.5		4.0			8.0	
19-20			5.5	9.0			3.0					2.5				2.0			10.0				10.5
20-21		2.5	7.5			3.0	3.5			2.0	2.5			5.5							4.0	5.5	9.5
21-22	7.5	6.5	10.0			1.5	3.5		2.5			2.5						3.0	7.0				8.0
22-23		10.5		8.5	3.0					3.5	2.0					2.0						3.0	6.5
23-24					2.0							2.0		3.0					4.5			9.0	5.0
24-25			3.0			3.5					2.0							10.5	10.5		4.0		3.5
25-26			5.5	8.0		2.5						1.5				2.0			1.5			6.5	2.5
26-27	4.5		7.5					1.5	1.5		1.5								8.0				
27-28		2.0	9.5		3.0			2.0		2.5		1.5					9.0					4.0	10.5
28-29		5.5		7.0	1.5			2.0	3.0					5.5		2.0			5.0		4.0	10.5	9.5
29-30	11.0	9.5				3.0		2.5											11.5			1.5	8.0
30-31			3.0			2.0		3.0											2.5			8.0	6.5

AAVSO Eclipsing Binary Ephemeris for August 2020 all times in U.T.
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	KV CYG	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 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
MAX	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	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
MIN	12.6	13.6	12.3	10.3	11.9	11.6	11.6	9.2	8.7	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
DUR	5	5	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	5	4
TOT											2							1				1	
							(S)		(S)											(S)			
0- 1			5.5	3.5	3.5				7.5	10.0					1.5	5.5	7.0						
1- 2							10.0				5.5		1.5				9.5		10.0				
2- 3	11.0		3.5			3.0				3.0			6.0	8.5	10.0								
3- 4			10.5							6.5			10.5	3.5	4.5			8.5			4.0		
4- 5			2.0	10.5			5.0	7.0		9.5						7.5	3.5				9.0		
5- 6	7.0	11.0	8.5	7.0													6.0						
6- 7				4.0	9.5	7.0				3.0				7.5	8.0		8.5	3.5		7.0			
7- 8			6.5		6.5				8.5	6.0				2.5	2.5		11.0						
8- 9	3.5	4.5			4.0		9.0			9.5			5.0			9.0							
9-10			5.0		1.5	2.0							9.5		11.0		2.5				4.0		
10-11				11.0		11.5				2.5				6.5	6.0		5.0				8.5	11.0	
11-12			3.0	7.5			4.0	8.0		6.0		11.0		1.5		2.5	7.5		4.5				
12-13			9.5	4.0						9.5						11.0	10.0						
13-14						6.0								11.0	9.0								
14-15			8.0		10.0				9.5	2.5		7.5	4.0	6.0	4.0		1.5		11.0				
15-16					7.0		8.0			6.0			8.5			4.0	4.0				4.0		
16-17		10.0	6.0	11.0	4.5					9.5							6.5			2.0	8.5		
17-18				8.0	2.0	10.5						4.5		10.0	7.0		9.0	9.0					
18-19			4.0	4.5			3.0	9.0		2.5				5.0	1.5		11.0						
19-20		4.0	11.0						2.0	6.0						6.0				8.5			
20-21			2.0			5.0				9.0	11.0	1.5	3.0		10.0		3.0	4.5					11.5
21-22			9.0						10.5				7.5	9.0	5.0		5.5				3.5		
22-23	8.0			11.5	10.5		7.0			2.5				4.0			8.0				8.5		
23-24			7.0	8.0	7.5			1.5		5.5						7.5	10.0						
24-25				5.0	5.0	9.5				9.0					8.0				5.5				
25-26	4.0		5.0	1.5	2.5		2.0	10.0			6.5			8.5	3.0		2.0						10.5
26-27							11.5		3.0	2.0			1.5	3.5			4.5						
27-28		9.5	3.5			4.0				5.5			6.5			9.5	6.5				3.5		
28-29			10.0						11.5	9.0			11.0		6.0		9.0				8.5		
29-30			1.5	8.5			6.0							7.5						3.0			
30-31		3.5	8.0	5.0	11.0			2.5		2.0	1.5			2.5		2.5							10.0

	SZ HER	TU HER	UX HER	CC HER	CT HER	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Z LEP	RR LEP	SS LIB	DELT LIB	RY LYN	UZ LYR	EW LYR	FL LYR	RW MON	BB MON	U OPH	SX OPH
MAX	10.2	10.6	8.9	9.5	9.9	9.2	9.2	10.9	8.5	10.5	10.5	11.0	10.2	10.4	4.8	11.9	9.8	11.2	8.7	9.1	10.6	5.8	10.5
MIN	12.0	13.4	9.8	12.8	11.2	10.0	10.0	12.3	9.5	11.0	11.0	12.5	10.9	11.3	5.9	13.3	11.0	13.6	9.5	11.9	11.3	6.5	11.2
DUR	4	5	5	4	4	3	3	4	4	5	5	4	4	6	7	4	5	5	4	5	4	5	5
TOT		1																		1			
							(S)				(S)												
0- 1			1.5			6.0	2.0	2.0		11.5			11.0										
1- 2						5.5		4.0	11.5		5.0				2.5								
2- 3	7.0				6.5	4.5		5.5						4.5								3.5	
3- 4	2.5		4.0			3.5	7.0	7.5	2.0			11.5					10.5						
4- 5					1.5	2.5	6.0	9.0			7.0	11.5				10.0							
5- 6						1.5	5.0	11.0		2.5		11.0		1.5			8.0						
6- 7	9.0	5.5	6.5	5.5			4.0		7.0			11.0							4.0				
7- 8	5.0					7.5	3.5				9.5	11.0					5.5					4.0	
8- 9						6.5	2.5			4.5		11.0			2.0				8.5				
9-10			8.5			5.5	1.5					10.5					2.5				11.5		
10-11						5.0					11.5	10.5						9.5					
11-12	7.0				5.0	4.0	7.5		2.5	6.5		10.5	11.0										
12-13	2.5					3.0	6.5					10.0						8.5				5.0	
13-14				4.0		2.0	5.5					10.0											
14-15							4.5		7.5	8.5		10.0				11.0		7.0					
15-16	9.0	7.0					3.5	3.0			2.5	9.5		3.0	2.0								
16-17	4.5					7.0	3.0	5.0										6.0					
17-18			2.5			6.0	2.0	6.5		10.5									1.5			5.5	
18-19						5.0		8.5			4.5							4.5		11.0			
19-20						4.5		10.0	3.0										5.5				
20-21	7.0		5.0	2.5	3.5	3.5	7.0										11.0	3.5			11.0		
21-22	2.5					2.5	6.0				6.5								10.0				1.5
22-23		2.5				1.5	5.0		8.0	1.5			10.5		1.5		8.5	2.5				6.5	
23-24			7.0				4.0																3.0
24-25	9.0					7.5	3.0				8.5						6.0						
25-26	4.5					6.5	2.5			3.5				4.5									4.5
26-27						5.5	1.5										3.0						
27-28					7.0	5.0			3.5		10.5											7.0	
28-29						4.0	7.5			5.5				1.5									
29-30	7.0				1.5	3.0	6.5	2.0															
30-31	2.5					2.0	5.5	4.0	8.5										3.0				

	V508 OPH	V839 OPH	1010 OPH	ER ORI	ER ORI	ET ORI	FL ORI	FT 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
MAX	10.1	8.8	6.2	9.5	9.5	11.2	10.5	9.1	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
MIN	10.7	9.4	7.0	10.2	10.2	12.4	13.2	9.7	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
DUR	3	3	4	3	3	5	3	4	4	4	3	3	6	12	3	3	3	2	4	6	4	8	5
TOT														4						2			1
					(S)					(S)		(S)				(S)							
0- 1	7.0										8.0	3.5			5.0		2.0	4.5	7.5		9.5		11.0
1- 2	8.0	6.5										6.5			7.0	2.5	5.0		7.0	8.5	6.0		
2- 3		2.0									5.0					4.5		8.0	6.0				
3- 4	1.5	7.5							10.0		8.0	3.5			2.0	6.5	4.0		5.5				
4- 5	2.5	3.0	5.5									6.5			4.0	8.5		11.0	5.0	10.0			
5- 6	3.0										5.0				6.0	2.0	3.0	4.0	4.5				
6- 7	4.0	4.0	5.0	9.5			10.5				8.0	3.5			8.5	4.0	6.0		4.0		8.5		
7- 8	4.5									10.0		6.5			1.5	6.0	2.0	7.5	3.5	11.0	4.5		
8- 9	5.5	5.5	5.0								5.0				3.5	8.0	5.0		2.5				9.5
9-10	6.5							10.5			8.0	3.5			5.5	1.5	1.5	10.5	2.0				
10-11	7.0	6.5	4.5									6.5	3.5	8.5	7.5	3.5	4.5	4.0	1.5				
11-12	8.0	2.0							10.0		5.0					5.5					10.5		
12-13		7.5	4.0								8.0	3.5			3.0	7.5	3.5	7.0			7.0		
13-14	1.5	3.0										6.5	6.0		5.0		6.5						
14-15	2.0		3.5			10.5					5.0				7.0	3.0	2.5	10.5					
15-16	3.0	4.0				9.5				10.5	8.0	3.5				5.0	5.5	3.5					
16-17	4.0		3.5									6.5	8.0		2.5	7.0	1.5						8.5
17-18	4.5	5.5		10.0							5.0				4.5		4.5	6.5			9.5		
18-19	5.5		3.0								8.0	3.5			6.5	2.0					5.5		
19-20	6.5	6.5							10.5			6.5	10.5		8.5	4.5	3.5	10.0					
20-21	7.0	2.0	2.5				9.5				5.0				2.0	6.5	6.5	3.0					
21-22	8.0	7.5									8.0	3.5		11.0	4.0	8.5	2.5						
22-23		3.0	2.0									6.5			6.0	1.5	5.5	6.0					
23-24	1.5	8.5								10.5	5.0				8.0	3.5	2.0				8.0		
24-25	2.0	4.0	2.0		9.5						8.0	3.5			1.5	5.5	5.0	9.5			4.5		7.0
25-26	3.0											6.5			3.5	7.5		2.5					
26-27	4.0	5.0	1.5								5.0				5.5		4.0						
27-28	4.5								10.5		8.0	3.5			7.5	3.0		6.0					
28-29	5.5	6.5		10.0								6.5				5.0	3.0				10.5		
29-30	6.5	2.0									5.0				3.0	7.0	6.0	9.0			6.5	11.5	
30-31	7.0	7.5									8.0	3.5			5.0		2.0						

	XZ PER	BETA PER	Y PSC	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU	WY TAU	AC TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	TY UMA	TY UMA	UX UMA
MAX	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	10.5	10.3	10.3	10.9	8.9	11.4	9.1	11.7	11.7	12.7
MIN	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	12.3	11.0	11.0	11.9	12.0	12.5	9.9	12.4	12.4	13.8
DUR	4	8	7	6	5	4	4	4	4	4	3	2	4	6	3	3	4	4	4	3	3	3	1
TOT				2						1													
									(S)							(S)				(S)		(S)	
0- 1					8.0			3.5		10.0							9.0			1.5	5.0		
1- 2			10.5	3.5		3.0		4.0				9.0								1.5		2.0	5.0
2- 3	8.0					6.0	5.0	5.0				11.0	9.0			6.5			10.0	2.0		3.5	
3- 4	11.5						2.0	5.5								7.0	7.5		4.0	2.0		5.0	4.5
4- 5											9.0		11.0			7.5	11.5			2.0	2.5		
5- 6			5.0		1.5	1.5													10.0	2.0	4.0		3.5
6- 7					6.0	4.5			1.5								5.5		4.5	2.0	5.5	1.5	
7- 8									2.5								9.5			2.0		3.0	2.5
8- 9									3.5										10.5	2.0		4.5	7.0
9-10	5.5						6.0		4.0		8.5			8.5	6.5		4.0		4.5	2.0	1.5	6.0	2.0
10-11	9.5					3.0	3.0		5.0						7.0		8.0			2.0	3.0		6.0
11-12				6.5		6.0			5.5				9.5	9.5	7.5				11.0	2.0	4.5		
12-13		11.5			4.0										8.0				5.0	2.0	6.0	2.0	5.5
13-14					8.5								11.0	10.5			6.0			2.0		3.5	
14-15						2.0		1.5			8.5						10.0		11.5	2.0		5.0	4.5
15-16		8.5				5.0		2.5				9.0						11.5	5.5	2.0	2.5		
16-17							6.5	3.5				11.0				6.5	4.5	11.0		2.0	4.0		4.0
17-18	7.0						4.0	4.0								7.0	8.5	10.0		2.0	5.5		
18-19	11.0	5.0			2.0			5.0								7.5		9.5	5.5	2.0		2.5	3.0
19-20					6.0	3.5		5.5			8.0					8.0		9.0		2.0		4.0	
20-21			6.5			6.5		6.5					9.5				6.5	8.0		2.0	1.5	5.5	2.0
21-22				10.0							10.0						11.0	7.5	6.0	2.0	3.0		6.5
22-23									1.5				11.5					7.0		2.0	4.5		1.5
23-24						2.0			2.5						6.5		5.0	6.0		2.0	6.0	1.5	5.5
24-25	5.0					5.0	4.5		3.0		7.5				7.0		9.0	5.5	6.5	2.0		3.5	
25-26	8.5				4.0		2.0		4.0	8.0					7.5			4.5		2.0		5.0	5.0
26-27					8.5				5.0		9.5				8.0					2.5	2.0		
27-28									5.5								7.0		7.0	2.5	3.5		4.0
28-29				4.5		4.0			6.5								11.5			2.5	5.0		
29-30						7.0					7.5	9.0	9.5							2.5		2.5	3.5
30-31								1.5				11.0					5.5		7.0	2.5		4.0	

	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	BT VUL	BU VUL
MAX	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	11.8	10.6
MIN	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	12.5	11.4
DUR	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5	5	4	5	4	3	3	3
TOT								(S)			(S)		(S)										
0- 1				5.0				2.0		1.5			3.5			8.0					8.5	4.5	5.0
1- 2			3.5	6.5	2.5		2.5			3.0						3.5	4.0				7.0	8.0	8.5
2- 3		11.0		7.5								1.5									6.0	11.5	
3- 4			10.5	8.5		2.0					1.5	3.0		3.5			4.5	5.0			5.0		
4- 5	1.5			10.0							3.0				1.5	9.0			2.5		3.5		4.5
5- 6	10.5			11.0	3.0											4.5	5.0				2.5		8.0
6- 7	3.0									1.5			2.0								1.5		11.0
7- 8										3.0			3.5				5.5		5.0				
8- 9				2.0										1.5		10.0					10.5	4.0	4.0
9-10				3.5	3.0			1.5			2.0	1.5				5.0	6.5				9.5	7.5	7.5
10-11			8.0	4.5			2.0				3.5	2.5						10.5	7.5		8.0	11.0	11.0
11-12				5.5				2.0				4.0			10.0		7.0				7.0		
12-13				7.0		2.0	2.5			2.0				3.5		10.5					6.0		3.5
13-14		11.0		8.0									2.0			6.0	7.5		10.0		4.5		7.0
14-15				9.0									3.0			1.5					3.5		10.5
15-16	1.5			10.5							2.5						8.0	6.5			2.5		
16-17	10.5											1.5			8.0	11.5					1.5	4.0	3.5
17-18	3.0		6.0									2.5				6.5	8.5					7.5	6.5
18-19				1.5	1.5					2.5		3.5				2.0			1.5		10.5	10.5	10.0
19-20				2.5													9.5				9.0		
20-21				4.0				1.5			1.5		2.0					2.0			8.0		3.0
21-22				5.0		2.0	2.0				3.0		3.0	3.0	6.0	7.5	10.0		4.0		7.0		6.0
22-23				6.0	1.5			2.5								3.0				10.5	6.0		9.5
23-24				7.5			3.0			1.5							10.5				4.5		
24-25		11.5	3.5	8.5						3.0		2.5							6.5	9.0	3.5	3.5	2.5
25-26				10.0								3.5				8.0	11.0				2.5	7.0	6.0
26-27	1.5		10.5	11.0	2.0				2.5		2.0				3.5	3.5				8.0		10.5	9.0
27-28	10.5										3.5		1.5					8.0	9.0				
28-29	3.0												3.0							6.5	10.5		2.0
29-30				2.0						2.0						9.0					9.0		5.5
30-31				3.0	2.5	2.0				3.5				2.5		4.5				5.5	8.0		8.5

	CD VUL
MAX	11.5
MIN	12.6
DUR	4
TOT	
0- 1	4.0
1- 2	
2- 3	5.0
3- 4	
4- 5	6.0
5- 6	
6- 7	7.5
7- 8	
8- 9	8.5
9-10	
10-11	10.0
11-12	2.5
12-13	11.0
13-14	3.5
14-15	
15-16	5.0
16-17	
17-18	6.0
18-19	
19-20	7.0
20-21	
21-22	8.5
22-23	
23-24	9.5
24-25	2.0
25-26	11.0
26-27	3.5
27-28	
28-29	4.5
29-30	
30-31	6.0

AAVSO Eclipsing Binary Ephemeris for September 2020 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			3.0	5.5		1.5	5.5		4.0		6.5		7.5		9.5			3.0				1.0	7.0
1- 2	4.0					1.0	5.0		3.5	9.5	12.0		8.0					3.5				3.5	2.5
2- 3	10.5			8.0	2.5	1.0	5.0		3.5	8.0	2.5		8.0		1.5			4.0				6.5	8.0
3- 4	1.5		2.0	0.5	11.0	1.0	5.0		3.0	6.0	8.0		8.5		4.0	7.5		4.0					3.5
4- 5	7.5			10.0		1.0	5.0		2.5	4.0			8.5	8.5	6.5	4.0		4.5					8.5
5- 6				2.5		1.0	5.0		2.5	2.5	4.0		9.0		9.5			5.0			7.5		4.0
6- 7	5.0		1.5	12.0	4.5	0.5	4.5		2.0	0.5	9.0		9.0	7.5				5.0					9.0
7- 8	11.0			4.5		0.5	4.5		1.5	10.0			9.5		1.5			5.5			4.0		4.5
8- 9	2.0						4.5		1.5	8.0	5.0		9.5	7.0	4.0			6.0					
9-10	8.5		1.0	7.0			4.5		1.0	6.5	10.5		10.0		7.0	8.5	4.0	6.0					5.5
10-11					6.0		4.5		0.5	4.5			10.0	6.0	9.5	5.0		6.5					
11-12	5.5			9.0			4.0			3.0	6.0		10.5				7.0	7.0	1.0			2.5	6.0
12-13	12.0			1.5			4.0	12.0		1.0	11.5		10.5	5.5	1.5			7.0	1.0			5.5	
13-14	3.0		12.0	11.0		8.0	4.0	11.5		10.5	2.0		11.0		4.0			7.5	1.5			8.0	7.0
14-15	9.0			3.5	8.0	8.0	4.0	11.0		8.5	7.5		11.0	4.5	7.0			8.0	1.5	4.5			
15-16						7.5	3.5	11.0		7.0			11.5		9.5	9.5		8.0	2.0				7.5
16-17	6.5		11.0	5.5		7.5	3.5	10.5		5.0	3.5		11.5	3.5		6.0			2.5				3.0
17-18		3.0				7.5	3.5	10.5		3.5	8.5		12.0		1.5	3.0			2.5				8.5
18-19	3.5			8.0	9.5	7.5	3.5	10.0		1.5				3.0	4.5				3.0		5.5		4.0
19-20	10.0		10.5	0.5		7.5	3.5	9.5		11.0	4.5				7.0				3.5				9.0
20-21	1.0			10.0		7.0	3.0	9.5		9.0	10.0			2.0	9.5				3.5		2.0		4.5
21-22	7.0	5.5		2.5	2.5	7.0	3.0	9.0		7.5									4.0			1.5	9.5
22-23			10.0	12.0	11.0	7.0	3.0	8.5		5.5	6.0			1.5	1.5	7.0			4.5			4.0	5.0
23-24	4.5			4.5		7.0	3.0	8.5		3.5	11.0				4.5	3.5			4.5			7.0	
24-25	10.5					7.0	3.0	8.0		2.0	1.5	1.5			7.0		3.0		5.0				6.0
25-26	1.5	8.5	9.5	7.0	4.5	6.5	2.5	7.5			7.0	1.5			9.5				5.5				
26-27	8.0					6.5	2.5	7.5		9.5		2.0					6.5		5.5				6.5
27-28				9.0		6.5	2.5	7.0		7.5	3.0	2.5			2.0				6.0				
28-29	5.0		8.5	1.5		6.5	2.5	6.5		6.0	8.0	2.5			4.5	8.0			6.5				7.5
29-30	11.5	11.5		11.0	6.0	6.5	2.5	6.5		4.0		3.0			7.0	4.5		0.5	6.5		7.0		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	6	3	5	5	5
TOT	(S)		(S)		(S)		(S)				(S)		(S)		(S)		(S)	(S)					(S)
0- 1				8.0					7.0		9.0			4.5	0.5		2.5		9.0	9.0	7.5	10.5	1.5
1- 2	7.5			11.0					11.5				3.0	3.5		3.5		1.0				5.0	
2- 3	3.0		9.5		7.5								2.5	2.0		0.5	4.5			4.0			8.5
3- 4	8.0				11.0						5.0		2.0	1.0	4.5	5.0	1.5			8.5			3.0
4- 5	3.5			7.5				8.5	10.5				1.0		3.5	2.5					7.0	6.5	
5- 6	9.0			11.0						8.5			0.5		2.5		3.5			3.0		1.0	10.0
6- 7	4.5				7.5										1.0	4.5	1.0	1.0		7.5			4.5
7- 8	9.5		11.0		10.5				9.5		11.5	3.0		4.0		2.0				12.0		8.0	
8- 9	5.0			7.0								2.5		2.5			3.0			2.0	7.0	2.0	11.5
9-10				10.5				8.0				2.0		1.5		4.0				6.5			5.5
10-11	6.0								8.5		8.0	1.0			4.0	1.5	5.0		7.0	11.0		9.0	
11-12					10.5							0.5			3.0		2.0	0.5		1.5		3.5	
12-13	6.5									11.0					2.0	3.0				6.0	6.5		7.0
13-14				10.0					7.0				3.0	4.5	0.5	0.5	4.0			10.5		10.5	1.5
14-15	7.0							7.5	11.5				2.5	3.5		5.0	1.5			0.5		5.0	
15-16	2.5				10.0					7.5			2.0	2.0		2.5				5.0			8.5
16-17	8.0	7.0											1.0	1.0	5.0		3.5			9.5	6.0	12.0	2.5
17-18	3.5			10.0					10.5		10.5		0.5		3.5	4.5	1.0					6.0	
18-19	8.5														2.5	2.0				4.0		0.5	9.5
19-20	4.0				9.5	5.5		7.0				3.0			1.5		3.0			8.5			4.0
20-21	9.5								9.5		7.0	2.5		4.0		3.5			5.0		5.5	7.5	
21-22	5.0	8.0		9.5			7.5					2.0		3.0		1.0	4.5			3.5		2.0	11.0
22-23										10.0		1.0		1.5			2.0			8.0			5.5
23-24	5.5				9.5	9.0			8.5			0.5			4.5	3.0						9.0	
24-25								6.5							3.0		4.0			2.5	5.5	3.5	
25-26	6.5			9.0			10.5			6.5			3.0		2.0	5.0	1.5			7.0			7.0
26-27		9.5							7.0				2.5	4.5	1.0	2.5				11.5		10.5	1.0
27-28	7.0				9.0				11.5		9.5		2.0	3.5			3.5			1.5		4.5	
28-29	2.5												1.0	2.0		4.5	1.0			6.0	5.0		8.0
29-30	7.5			8.5				6.0	6.0					1.0		1.5	5.5			10.5		11.5	2.5

AAVSO Eclipsing Binary Ephemeris for September 2020 all times in U.T.
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	R	RT	TU	UU	XZ	AK	RW	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	PV	V364	V364	V375
	CMA	CMA	CMA	CMA	CMI	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS
MAX	6.2	11.4	9.7	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	10.0	11.2	11.2	10.1
MIN	6.8	12.9	10.7	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	10.6	11.7	11.7	10.9
DUR	4	5	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5
TOT													(S)							(S)		(S)	
0- 1			10.0			10.0		1.0	2.0		8.5	4.5	0.5	6.5	11.0			3.5	10.5				
1- 2									7.0			3.5	7.0	1.5	3.5	12.0	3.5	9.5		8.0	9.5		8.0
2- 3									11.5	10.5		2.5	6.0		12.0		7.0		4.5			4.0	
3- 4							5.5				2.0	1.5	5.0	10.0	4.5	8.0	11.0			2.0			
4- 5					10.0			7.5		6.0	11.0		4.0	4.5							11.5		7.0
5- 6												7.0	3.0		5.5	4.5		3.0				6.0	
6- 7									1.5	1.5		6.0	2.0					9.0					
7- 8								3.5	6.0		4.5	5.0	1.0	8.0	6.5	0.5			10.5				5.5
8- 9					11.0				11.0			4.0	7.5	3.0			2.0			8.0		8.0	
9-10			10.5	11.0		11.0						2.5	6.5		7.5		6.0		4.5		2.5		
10-11												1.5	5.5	11.5			10.0	3.0		2.5			4.0
11-12		9.5								12.0	7.0	0.5	4.5	6.5	8.5			8.5				10.0	
12-13									1.0			7.0	3.5	1.0	0.5						4.5		
13-14						10.0			5.5	7.5		6.0	2.5		9.5								3.0
14-15								6.5	10.5		0.5	5.0	1.5	9.5	1.5	9.5			10.5				
15-16	11.5				10.0					3.0	9.5	4.0		4.5	10.5		1.0	2.5		8.5	6.5		
16-17												3.0	7.0		2.5	5.5	5.0	8.5	4.5			1.0	1.5
17-18						9.5		2.5				2.0	6.0		11.5		8.5			2.5			
18-19			11.0								3.0	1.0	5.0	8.0	3.5	1.5					8.5		
19-20					11.0				5.0		12.0	7.5	4.0	2.5								3.0	
20-21		11.0					4.5		10.0			6.5	2.5		4.5			2.0					11.5
21-22												5.5	1.5	11.0				8.0	10.5		10.5		
22-23				11.0		11.5				9.0	5.5	4.5	0.5	6.0	5.5					8.5		5.0	
23-24	10.5											3.5	7.0	1.0			3.5		4.5				10.5
24-25								5.5		4.5		2.5	6.0		6.5		7.5			2.5			
25-26									4.5			1.5	5.0	9.5		10.5	11.5	1.5				7.5	
26-27					10.0	10.5			9.0		8.0		4.0	4.0	8.0			7.5			2.0		9.0
27-28			11.5					2.0				7.0	3.0			6.5							
28-29												6.0	2.0		9.0				10.5			9.5	
29-30											1.5	5.0	1.0	7.5	1.0	3.0				8.5	4.0		8.0

	U	SU	WZ	WZ	XX	DK	DL	DV	EG	SS	RW	RW	RZ	RZ	SS	SS	CC	CC	U	RW	Y	SW	WW
	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CET	COM	COM	COM	COM	COM	COM	COM	COM	CRB	CRB	CYG	CYG	CYG
MAX	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	9.4	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	7.0	9.3	9.9
MIN	9.8	9.8	11.3	11.1	9.6	14.2	13.2	12.4	10.6	13.0	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	7.6	11.8	13.2
DUR	4	4	3	3	4	4	5	4	3	5	3	3	3	3	4	4	2	2	5	4	6	5	5
TOT	2									2												2	
				(S)								(S)		(S)		(S)		(S)					
0- 1	6.0		7.5	2.5			2.0		5.0	6.5		1.0			0.5			0.5		3.0	1.5		2.0
1- 2			3.5	8.5					7.0							1.5							
2- 3		10.0	9.5	4.5		11.5			9.5		1.0												
3- 4		7.5	5.5	0.5		11.5	8.5	1.0	11.5	6.0										0.5	1.5		9.5
4- 5		5.0	1.5	6.5	0.5	11.0		5.0	0.5			1.5	0.5										
5- 6	5.5	2.5	7.5	2.5		10.5		9.0	2.5				1.0							5.0			
6- 7			3.5	8.5	8.5	10.5			5.0	5.5			1.5								1.5		
7- 8			9.5	4.5		10.0			7.0		1.0				1.0								
8- 9			5.5	0.5		9.5	5.5		9.0							1.5				3.0			
9-10			2.0	7.0		9.5			11.5	4.5		1.5									1.5		
10-11	5.5		8.0	3.0		9.0																2.0	0.5
11-12		10.0	4.0	9.0	1.0	8.5	12.0	4.5	2.5		1.5									0.5			
12-13		7.5	10.0	5.0		8.5		8.5	4.5								1.5				1.5		
13-14		5.5	6.0	1.0	9.0	8.0	3.0		7.0							0.5		1.0	3.0	5.0			8.5
14-15		3.0	2.0	7.0		7.5			9.0			1.0			1.5		1.0						
15-16	5.0	0.5	8.0	3.0		7.5			11.0					1.0				1.0			1.5		
16-17			4.0	9.0		7.0	9.5				1.5			1.0			0.5			2.5			
17-18				5.0		6.5			2.5					1.5									
18-19			6.0	1.0	1.0	6.5		3.5	4.5			1.5									1.0		
19-20			2.0	7.0		6.0		7.5	6.5			0.5										5.5	
20-21	4.5	10.5	8.5	3.5	9.5	5.5		11.5	8.5							1.0			1.0				
21-22		8.0	4.5	9.5		5.5	7.0		11.0		1.0									4.5	1.0		
22-23		5.5		5.5		5.0																	
23-24		3.5	6.5	1.5		4.5			2.0			1.5											7.0
24-25		1.0	2.5	7.5		4.5			4.0											2.5	1.0		
25-26	4.5		8.5	3.5	1.5	4.0		3.0	6.5		2.0												
26-27			4.5	9.5		3.5	4.0	7.0	8.5		0.5		1.0		0.5								
27-28			0.5	5.5	9.5	3.5		11.0	10.5				1.0			1.5					1.0		
28-29			6.5	1.5		3.0						1.0	1.5					1.5				9.0	
29-30		11.0	2.5	7.5		2.5	10.5		2.0								1.0			4.5			

	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	V477 CYG	V704 CYG	W DEL	TT DEL	TY DEL	YY DEL	FZ DEL	Z DRA	RZ DRA	TW 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	8.3	13.8	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8
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	8.7	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5
DUR	4	4	4	3	4	5	5	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5
TOT																2							1
												(S)		(S)									
0- 1	8.5				5.0				1.5	8.0	8.5				5.5						11.0	3.5	10.0
1- 2			4.0	5.0	3.5			6.5		5.5		1.0			9.0			0.5		4.0		5.5	
2- 3	6.0	10.0			2.5					3.0				4.0				5.0	6.5			8.0	
3- 4		9.5		2.5	1.0			4.5			3.0				2.0				1.5		4.0	10.5	5.5
4- 5	3.0	8.5		9.0	11.0			11.0	9.0						5.5					7.5			
5- 6	9.5	8.0	4.0		9.5			2.5	5.5			5.0			8.5					2.0		2.5	
6- 7		7.5		6.5	8.0			9.5	2.0				3.5				7.0		6.0			4.5	0.5
7- 8	6.5	6.5			6.5		9.0	0.5			7.0				2.0				1.0		6.0	7.0	
8- 9		6.0		4.0	5.0	9.0		7.5		8.5					5.0			4.0		5.5		9.5	
9-10	4.0	5.0	4.0	10.0	3.5					6.0		9.5		5.0	8.5		4.0	9.0					
10-11	10.0	4.5		1.5	2.5		2.5	5.5	9.0	3.5	2.0				12.0				5.0			1.5	
11-12	1.0	3.5		7.5	1.0	5.0			5.5	1.0					1.5					8.5	7.5	3.5	
12-13	7.5	3.0			11.0			3.5	2.5			4.0			5.0		1.0			3.0		6.0	
13-14		2.0	4.0	5.0	9.5			10.5					4.5		8.5				9.0			8.5	
14-15	4.5	1.5			8.0	1.0		2.0			6.0				12.0			3.0	4.0		1.0	11.0	11.0
15-16	10.5	0.5		2.5	6.5			8.5							1.5			7.5		6.5	9.5		
16-17	2.0			8.5	5.0				9.5	9.0		8.5		6.0	5.0					1.0		2.5	
17-18	8.0		3.5		4.0			6.5	6.0	6.5	1.0				8.5				8.5			5.0	6.0
18-19				6.0	2.5		8.0		2.5	4.0					12.0	7.0			3.5		2.5	7.5	
19-20	5.0				1.0			5.0		1.5		3.0			1.5					4.5	11.0	10.0	
20-21				3.5	11.0								5.5		5.0			2.0					1.5
21-22	2.5		3.5	10.0	9.5		2.0	3.0			5.0				8.5			6.5	7.5			1.5	
22-23	8.5			1.0	8.0			9.5	9.5						11.5				2.5	7.5	4.5	4.0	
23-24				7.5	6.5			1.0	6.5			7.5		7.0	1.5	2.5				2.5		6.5	
24-25	6.0				5.0			8.0	3.0	9.5					4.5							9.0	
25-26			3.5	5.0	4.0	9.5				7.0	9.5				8.0				6.5				
26-27	3.0				2.5			6.0		4.5		2.0			11.5			1.0	1.5	5.5	6.0	0.5	
27-28	9.5			2.0	1.0					2.0			6.5		1.0			5.5				3.0	
28-29				8.5	11.0	5.5		4.0			4.0				4.5							5.5	11.5
29-30	6.5		3.5		9.5		7.5	11.0	6.5						8.0		6.0		6.0	9.0		8.0	

	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	DI HYA	SW LAC	SW LAC	VX LAC	CM LAC	CO LAC	CO LAC	Y LEO	UU LEO
MAX	9.9	9.9	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11.0	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4
MIN	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	12.0	10.0	10.0	12.3	9.5	11.0	11.0	12.7	12.7
DUR	5	5	4	4	3	3	5	4	4	5	5	4	4	4	4	3	3	4	4	5	5	5	4
TOT				1			1			1													
		(S)				(S)											(S)				(S)		
0- 1										4.0	1.0					1.0	4.5	6.0		7.5			
1- 2		9.5															3.5	7.5			1.5		
2- 3			3.5				9.0									7.0	3.0	9.5					11.5
3- 4	0.5		8.0		7.0				4.5		3.5					6.0	2.0	11.0		9.5			
4- 5								9.5								5.0	1.0		4.5		3.5		
5- 6															12.0	4.5							
6- 7	7.0										6.0					3.5	7.0			11.5			
7- 8						7.5			7.0							2.5	6.0		9.5		5.5		
8- 9			3.5			6.5			2.5			4.5		11.0		1.5	5.0			0.5			
9-10			8.0					9.0		5.5						0.5	4.0						
10-11				9.0												7.5	3.0				7.5	10.0	
11-12		4.0														6.5	2.5			2.5			
12-13					7.0				4.5							5.5	1.5	1.5	5.0				
13-14															12.0	4.5		3.5			9.5		
14-15		10.5	3.0					8.0					3.5			4.0	7.5	5.0		4.5			
15-16			8.0									3.0				3.0	6.5	7.0	10.0			11.5	
16-17	1.5					7.5			7.0	1.0						2.0	5.5	8.5			11.5		
17-18						6.5			2.5		2.0					1.0	4.5	10.5		6.5			
18-19																	3.5				0.5		
19-20	8.0							7.5								7.0	2.5						
20-21			3.0								4.5					6.0	2.0		5.5	8.5			
21-22			7.5		7.0				4.5						11.5	5.0	1.0				2.5		
22-23							10.5					1.5				4.0	7.5						
23-24				9.5									2.0	12.0		3.5	7.0		10.5	10.5			
24-25		5.5														2.5	6.0				4.5		
25-26						7.5	7.0		7.0	2.5						1.5	5.0		1.0				
26-27			3.0			7.0			2.5							0.5	4.0	0.5					
27-28		11.5	7.5													7.5	3.0	2.5			6.5		
28-29																6.5	2.0	4.5	6.0	1.5			
29-30	2.5															5.5	1.5	6.0					

	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	ER ORI	ET ORI	FL ORI
MAX	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	9.5	11.2	10.5
MIN	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	10.2	12.4	13.2
DUR	4	4	6	7	4	5	5	4	5	5	5	4	5	5	5	3	3	4	4	3	3	5	3
TOT											1		1										
										(S)											(S)		
0- 1												11.0					3.0			9.0			
1- 2								7.5								0.5							
2- 3		10.0														1.5	4.0					11.0	
3- 4		8.0										9.5				2.0				8.5		10.0	8.5
4- 5																3.0	5.0		12.0		9.5	9.0	
5- 6				0.5												4.0	1.0					7.5	
6- 7					10.0											4.5	6.5			7.5			11.0
7- 8																5.5	2.0				9.0		
8- 9						9.0					10.5		10.5	1.0		6.5							
9-10	10.0																3.0						
10-11						6.5			11.5		8.0										8.0		
11-12												10.5				0.5	4.0		11.5	9.5			
12-13		12.0				3.5		4.5								1.5							
13-14		10.0												2.0		2.0	5.0						
14-15		7.5				1.0		9.0								3.0	1.0			8.5			
15-16																4.0	6.0				10.0		
16-17					11.5											4.5	2.0						
17-18																5.5				7.5			7.5
18-19														2.5		6.5	3.0		11.0		9.0		
19-20					8.0																		
20-21			2.0				8.0										4.0						10.0
21-22																					8.0	11.5	
22-23							6.5			10.5		10.5				1.5	5.0			9.5		10.5	
23-24		11.5						2.0						3.5	2.0	2.0	0.5					9.0	
24-25		9.5					5.5									3.0	6.0				7.5	8.0	
25-26								6.5							3.5	4.0	2.0		10.5	8.5		7.0	
26-27							4.0									4.5		3.5			10.0		
27-28						7.0					12.0					5.5	3.0						
28-29							3.0		10.0				11.0	4.0		6.5		3.0		8.0			
29-30					9.0	4.5					9.5						4.0				9.5		

	FT 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	UZ PUP	U SGE	V505 SGR
MAX	9.1	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	9.7	6.4	6.4
MIN	9.7	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	10.3	9.1	7.6
DUR	4	4	4	3	3	6	12	3	3	3	2	4	6	4	8	5	4	8	7	4	4	6	5
TOT							4						2			1						2	
			(S)		(S)				(S)												(S)		
0- 1			10.5	1.5	6.0			7.0	2.5	5.0					11.0								2.0
1- 2	12.0		9.0	4.5					4.5	1.0	5.5					5.5	6.5						6.5
2- 3			7.5	7.5	3.0			2.5	6.5	4.0		11.5			10.0		10.0						
3- 4				1.5	6.0			4.5	8.5		8.5	11.0		9.0									
4- 5		10.5		4.5				6.5	2.0	3.0	1.5	10.5		5.5	9.5			10.0	8.0				
5- 6		9.0		7.5	3.0			8.5	4.0	6.0	12.0	9.5											
6- 7		7.5		1.5	6.0			1.5	6.0	2.5	5.0	9.0			9.0								
7- 8				4.5			2.5	3.5	8.0	5.5		8.5						7.0				8.0	4.5
8- 9			10.5	7.5	3.0			6.0	1.5	1.5	8.0	8.0		11.5	8.5		4.5		2.5				
9-10			9.0	1.5	6.0			8.0	3.5	4.5	1.5	7.5		7.5		4.5	8.0						
10-11			7.5	4.5		2.0		1.0	5.5	0.5	11.5	7.0	2.0	4.0	7.5		11.5	3.5					
11-12				7.5	3.0			3.0	7.5	3.5	4.5	6.0											
12-13		10.5		1.5	6.0			5.0	1.0	6.5		5.5			7.0								
13-14		9.0		4.5		4.0		7.0	3.0	2.5	8.0	5.0	3.5							12.0			2.5
14-15		7.5		7.5	3.0			0.5	5.0	5.5	1.0	4.5		10.0	6.5	11.5						2.0	7.0
15-16				1.5	6.0			2.5	7.0	1.5	11.0	4.0		6.5							11.5		
16-17			10.5	4.5		6.0		4.5		4.5	4.0	3.5	4.5	3.0	5.5		6.0						
17-18			9.0	7.5	3.0			6.5	2.5	1.0		2.5				3.0	9.5			11.5			
18-19			7.5	1.5	6.0		4.5		4.5	3.5	7.5	2.0			5.0								
19-20				4.5	9.0	8.5		2.0	6.5	6.5		1.5	6.0						9.5		11.0		
20-21	9.5	10.5		7.5	3.0			4.0	8.5	3.0	10.5	1.0		8.5	4.5								4.5
21-22		9.0		1.5	6.0			6.0	2.0	6.0	3.5			5.0						11.0			
22-23		7.5		4.5	9.0	10.5		8.0	4.0	2.0			7.5			10.0							
23-24				7.5	3.0			1.5	6.0	5.0	7.0						3.5		4.0		10.5		
24-25			10.5	1.5	6.0			3.5	8.0	1.0							7.0	11.5				5.5	
25-26			9.0	4.5	9.0			5.5	1.0	4.0	10.0		8.5	11.0			11.0			10.0			
26-27			7.5	7.5	3.0			7.5	3.0		3.5			7.5									2.5
27-28				1.5	6.0			1.0	5.5	3.0				4.0				8.5					
28-29		10.5		4.5	9.0			3.0	7.5	6.0	6.5		10.0										
29-30		9.0		7.5	3.0		7.0	5.0	0.5	2.0													

	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	TX UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI
MAX	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	6.8	11.7	11.7	12.7	10.1	10.1	9.8	10.7
MIN	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	8.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4
DUR	4	4	4	4	4	3	2	4	6	5	3	3	4	4	4	6	3	3	1	3	3	4	4
TOT					1																		
				(S)								(S)						(S)					
0- 1			2.5			9.5		11.5				7.0	9.5				1.0		2.5			1.0	4.5
1- 2	2.5	2.5	3.0			5.5				7.5		7.5					2.5						5.5
2- 3			4.0									8.0	3.5		7.5				1.5			8.0	7.0
3- 4						7.0				8.5	4.5		8.0					1.5		7.5			8.0
4- 5											5.0		12.0					3.0	1.0		11.5		9.0
5- 6	1.0				10.0	9.0		8.0		9.5	5.5		2.0		8.0					8.5			10.5
6- 7	4.0			1.0							6.0		6.0		2.0		2.0			1.0			11.5
7- 8				1.5				9.5		10.5	7.0		10.0				3.5		4.5	10.0			
8- 9		3.5		2.5	4.0	7.0					7.5				8.0	1.5		0.5					1.5
9-10		0.5		3.0				11.5		11.5	8.0		4.0		2.5			2.0	3.5	11.5	8.5	5.5	2.5
10-11	2.5			4.0		8.5	5.5					4.5	8.5					3.5					4.0
11-12							7.5					5.0			8.5		1.0		3.0				5.0
12-13							9.5					5.5	2.5		2.5		2.5						6.0
13-14						6.5	11.0					6.0	6.5				4.0		2.0				7.5
14-15	1.5		1.0					8.0				6.5	10.5		9.0			1.5		7.0			8.5
15-16	4.5	4.5	1.5			8.5						7.5			3.0			3.0	1.0		11.5		9.5
16-17		1.5	2.5		11.5			10.0				8.0	4.5							8.5		3.0	11.0
17-18			3.0								4.5		9.0		9.0		1.5			1.0			
18-19			4.0			6.5		11.5			5.0			11.5	3.5		3.0		5.0	10.0		10.5	0.5
19-20	3.0				6.0						5.5		3.0	11.0									2.0
20-21						8.0					6.0		7.0	10.5	9.5			2.0	4.0	11.5	8.5		3.0
21-22								6.0	6.5		6.5		11.0	9.5	3.5			3.5					4.5
22-23				1.0							7.5			9.0			1.0		3.0				5.5
23-24	1.5	2.0		1.5		6.0		8.0	7.5		8.0		5.5	8.0	10.0		2.5					0.5	6.5
24-25	4.5			2.5			6.0					4.5	9.5	7.5	4.0		4.0		2.5				8.0
25-26				3.0		8.0	7.5	10.0	8.5			5.0		7.0				1.0		7.0		8.0	9.0
26-27				4.0			9.5					5.5	3.5	6.0	10.5	10.5		2.5	1.5		11.5		10.5
27-28						10.0	11.5	12.0	9.5			6.0	7.5	5.5	4.5			4.0		8.5			11.5
28-29	3.5					5.5						6.5	11.5	5.0			1.5		1.0	1.0			
29-30									10.5			7.0	1.5	4.0	10.5		3.0			10.0			1.5

	VV VIR	AH 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	11.7	9.7	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	13.5	10.2	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	3	3	3	3	4	6	5	4	5	4	3	3	3	4
TOT		(S)		(S)		(S)										
0- 1				0.5				1.5					7.0			
1- 2										3.5	1.0	4.0	5.5	3.5	1.5	7.0
2- 3													4.5	7.0	5.0	
3- 4			1.0			1.5			5.0			2.5	3.5		8.5	8.5
4- 5											3.5		2.0			0.5
5- 6												1.5	1.0		1.5	9.5
6- 7				1.0	1.0										4.5	2.0
7- 8									6.0		6.0				8.0	
8- 9	0.5								1.0	9.5						3.0
9-10		0.5	1.5										8.0	3.0	1.0	
10-11						1.5					8.5		6.5	6.5	4.0	4.5
11-12									6.5				5.5		7.5	
12-13	1.0							8.0	2.0				4.5			5.5
13-14					0.5					5.0			3.0			
14-15					2.0								2.0		4.0	7.0
15-16									7.5				1.0		7.0	
16-17	1.5								3.0							8.0
17-18				0.5		1.0		6.0						3.0		
18-19										1.0	2.5			6.0	3.5	9.5
19-20									8.0				7.5	9.5	6.5	1.5
20-21		0.5	0.5						3.5				6.5		10.0	
21-22					1.5						5.0		5.5			3.0
22-23								4.0					4.5		3.0	
23-24				1.0					9.0				3.0		6.5	4.0
24-25						1.0			4.5		7.5		2.0		9.5	
25-26										6.5			1.0	2.5		5.5
26-27			1.0				1.5							6.0	2.5	
27-28								1.5						9.5	6.0	6.5
28-29					1.5				5.0						9.0	
29-30				1.5									7.5			8.0

AAVSO Eclipsing Binary Ephemeris for October 2020 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	2.5			3.5		6.0	2.0	6.0		2.5	4.0	3.0		1.5		1.0					8.0	3.0	
1- 2	8.5		8.0			6.0	2.0	5.5		0.5	9.5	3.5				1.0		3.0	3.5	0.5	3.5	8.5	10.5
2- 3				5.5		6.0	2.0	5.5		10.0	0.0	3.5	2.0			1.5				3.0	9.0	4.0	
3- 4	6.0				8.0	6.0	2.0	5.0		8.0	5.5	4.0	4.5			2.0				6.0	4.5	9.0	
4- 5	12.0		7.5	8.0		6.0	2.0	4.5		6.5	10.5	4.0	7.0			2.0					9.5	4.5	
5- 6	3.0			0.5		5.5	1.5	4.5		4.5	1.5	4.5		5.5		2.5					5.0		
6- 7	9.5			10.0	1.0	5.5	1.5	4.0		3.0	6.5	4.5		2.5		3.0					0.5	5.5	11.5
7- 8	0.5		6.5	2.5	9.5	5.5	1.5	3.5		1.0	12.0	5.0	2.0			3.0					5.5	1.0	
8- 9	6.5			12.0		5.5	1.5	3.5		10.5	2.5	5.0	4.5			3.5					1.0	6.0	
9-10				4.5		5.0	1.5	3.0		8.5	8.0	5.5	7.5		2.5	4.0					6.5	1.5	
10-11	4.0		6.0		2.5	5.0	1.0	2.5		7.0		5.5				4.0					2.0	7.0	
11-12	10.0			7.0	11.5	5.0	1.0	2.5		5.0	3.5	6.0		6.5	6.0	4.5					7.0	2.5	
12-13	1.0					5.0	1.0	2.0		3.0	9.0	6.0	2.0	3.5		5.0			5.0	2.0	2.5	7.5	
13-14	7.5		5.5	9.0		5.0	1.0	1.5		1.5		6.5	4.5			5.0				4.5	8.0	3.0	
14-15				1.5	4.5	4.5	0.5	1.5		11.0	5.0	6.5	7.5			5.5			1.5		3.5	8.0	
15-16	4.5			11.0		4.5	0.5	1.0		9.0	10.0	7.0				6.0					8.5	3.5	
16-17	11.0		4.5	3.5		4.5	0.5	0.5		7.0	1.0	7.0				6.0					4.0	9.0	
17-18	2.0					4.5	0.5	0.5	12.0	5.5	6.0	7.5	2.0	7.5			0.5				9.5	4.5	
18-19	8.0			6.0	6.0	4.5	0.5		12.0	3.5	11.5	7.5	5.0	4.0			0.5	2.0			5.0	9.5	
19-20			4.0			4.0	0.0		11.5	2.0	2.0	8.0	7.5	1.0			1.0					5.0	
20-21	5.5	2.5		8.0		4.0	0.0		11.0	0.0	7.5	8.0					1.5				5.5	0.5	
21-22	11.5			0.5		4.0	0.0		11.0	9.5		8.5					1.5				1.0	6.0	
22-23	2.5		3.5	10.0	8.0	4.0	8.0		10.5	7.5	3.5	8.5	2.0				2.0			1.0	6.0	1.5	
23-24	9.0			2.5		4.0	8.0		10.0	6.0	8.5	9.0	5.0				2.5			3.5	1.5	6.5	
24-25		5.5		12.0		3.5	7.5		10.0	4.0		9.0	7.5	5.0	2.0		2.5			6.5	7.0	2.0	
25-26	6.0		2.5	4.5	1.0	3.5	7.5		9.5	2.5	4.5	9.5		2.0			3.0		3.0		2.5	7.5	
26-27	12.5				9.5	3.5	7.5		9.0	0.5	10.0	9.5			5.5		3.5				7.5	3.0	
27-28	3.5			7.0		3.5	7.5		9.0	10.0	0.5	10.0	2.5				3.5				3.0	8.0	
28-29	9.5	8.0	2.0			3.5	7.0		8.5	8.0	5.5	10.0	5.0				4.0				8.5	3.5	
29-30	0.5			9.0	2.5	3.0	7.0		8.0	6.5	11.0	10.5	7.5				4.0				4.0	8.5	5.0
30-31	7.0			1.5	11.5	3.0	7.0		8.0	4.5	1.5	10.5		6.0			4.5				9.0	4.0	

	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	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA	SX 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	10.6	8.6	10.5	11.6	11.6	6.2	11.4	10.3
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	12.4	9.4	11.3	11.8	11.8	6.8	12.9	11.4
DUR	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	6	3	5	5	5	4	5	4
TOT	(S)		(S)		(S)				(S)		(S)		(S)		(S)					(S)			
0- 1		12.0	5.0			11.5	10.5		6.0						2.5	3.0	1.0		6.0				
1- 2			8.5										2.5		0.0		5.5		0.5	9.5	9.0		
2- 3		5.0	12.0				5.0	9.0					1.5	1.0			10.0	4.5		4.0	12.5		
3- 4		8.5					9.5						0.0		2.0	10.5	0.0		7.5			9.5	9.0
4- 5		11.5				5.5			12.5	1.0		3.0		3.0			4.5		1.5	11.0			
5- 6	5.5		8.0			11.0		5.5		0.5		1.5		0.5			9.0			5.0			
6- 7			11.5				8.5					0.5			1.5			4.0	8.5				
7- 8		8.0							8.5					2.5			3.5	12.0	3.0	12.0			
8- 9		11.5											2.0		3.0		8.0			6.5			
9-10			8.0			4.5	7.5	12.0					1.0		0.5				10.0	1.0	8.0		
10-11	6.5		11.0			10.5	11.5		5.0		1.0			1.5		1.0	3.0	4.0	4.5		11.0		
11-12		7.5									0.5	2.5			2.5		7.5	12.0		8.0			12.0
12-13		11.0					6.0	8.5				1.0					12.0		11.5	2.5		11.0	
13-14			7.5				10.5							1.0		8.5	2.0		6.0				
14-15			11.0			4.0			11.5				2.5		2.0		6.5	3.5	0.0	9.5			
15-16	8.0	7.5				10.0	5.0	4.5					1.5	3.0			11.0	11.5		3.5			
16-17		10.5					9.5			1.0			0.5	0.0			1.0		7.0			8.0	9.0
17-18			7.0						8.0	0.5					1.0		5.5		1.5	10.5			
18-19			10.5	4.5								2.0		2.0			10.0	3.0		5.0	10.0		
19-20		7.0				3.5	8.5	11.0				0.5			3.0		0.5	11.0	8.5				
20-21	9.0	10.5			6.0	9.5			4.0						0.5		5.0		3.0	12.0			
21-22			7.0										2.0	1.5			9.5			6.5		12.0	
22-23			10.0	7.5			7.5	7.5			1.0		1.0		2.5			3.0	10.0	0.5			
23-24		6.5					11.5				0.5					6.5	4.0	10.5	4.0				
24-25		10.0			9.0	3.0			10.5			2.5		1.0			8.5			7.5			12.0
25-26	10.0		6.5			9.0	6.5	3.5				1.0			2.0				11.0	2.0		9.5	
26-27			10.0	11.0			10.5					0.0		2.5			3.0	2.5	5.5		9.0		
27-28		6.5							7.0				2.5	0.0			7.5	10.5		9.0	12.0		
28-29		9.5			12.5		5.0			1.0			1.5		1.0		12.0			3.5			
29-30			6.0				9.5	10.0		0.5			0.5	2.0			2.5		7.0				8.5
30-31	11.5		9.5			8.5			3.0						3.0		7.0	2.0	1.5	10.5			

	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	PV CAS	V364 CAS	V364 CAS	V375 CAS
MAX	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	10.0	11.2	11.2	10.1
MIN	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	10.6	11.7	11.7	10.9
DUR	4	4	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5
TOT			(S)										(S)							(S)		(S)	
0- 1					11.0	9.5					10.5	4.0	7.5	2.5	10.0		2.5	1.0	4.5				
1- 2									4.0	10.5		2.5	6.5		2.0		6.5	7.0		2.5		11.5	
2- 3									8.5			1.5	5.5	11.0	11.0		10.0				6.0		6.5
3- 4					8.5					6.0	4.0	0.5	4.5	5.5	3.0							0.5	
4- 5		11.5			12.5	8.5		4.5				7.5	3.5	0.5	12.0								
5- 6	9.0			11.0		12.0				1.5		6.0	2.5		4.0			0.5	10.5		8.0		5.5
6- 7	12.0		10.5									5.0	1.5	9.0		11.5		6.5		8.5		2.5	
7- 8					9.5		3.5	1.0	3.5		6.5	4.0	0.5	4.0	5.0		1.5		4.5				
8- 9						8.0			8.0			3.0	7.0			8.0	5.0			2.5	10.0		4.0
9-10						11.0						2.0	6.0	12.5	6.0		9.0					4.5	
10-11										12.0		1.0	5.0	7.5		4.0		0.5					
11-12					11.0						9.0	7.5	4.0	2.0	7.0			6.0			12.0		3.0
12-13										7.5		6.5	2.5			0.0		12.0	10.5			6.5	
13-14						10.0			3.0			5.5	1.5	10.5	8.0					8.5	1.0		
14-15	9.5				8.5			4.0	7.5	3.0	2.5	4.5	0.5	5.5	0.5		0.0		4.5				1.5
15-16					12.0				12.0		11.0	3.5	7.5	0.5	9.0		4.0			2.5		8.5	
16-17												2.5	6.0		1.5		7.5	6.0			3.5		
17-18						9.0		0.0				1.5	5.0	9.0	10.0		11.5	11.5					0.5
18-19				11.0	9.5	12.5					5.0	0.5	4.0	3.5	2.5							11.0	11.5
19-20									2.0			7.0	3.0		11.0	9.0			11.0		5.5		
20-21									7.0			6.0	2.0	12.0	3.5					8.5			
21-22						8.0			11.5	9.0		5.0	1.0	7.0	12.0	5.0		5.5	5.0				10.5
22-23					11.0	11.5					7.0	4.0	7.5	2.0	4.5		2.5	11.5		2.5	7.5		
23-24	10.0									4.5		3.0	6.5			1.5	6.5					2.0	
24-25							3.0	3.0				1.5	5.5	10.5	5.5		10.5						9.0
25-26					8.5	7.5			1.5	0.0	1.0	0.5	4.5	5.0							9.5		
26-27					12.0	10.5			6.5		9.5	7.5	3.5	0.0	6.5			5.0	11.0			4.0	
27-28		10.0							11.0			6.5	2.5					11.0		8.5			8.0
28-29												5.0	1.5	8.5	7.5				5.0		11.5		
29-30			9.0		9.5						3.0	4.0	0.5	3.5			1.5			2.5		6.0	
30-31						9.5				10.5	12.0	3.0	7.0		8.5	10.0	5.5				0.5		6.5

	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	U CRB	RW CRB	V CRT	Y CYG	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG
MAX	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	7.6	10.1	9.5	7.0	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5
MIN	9.8	9.8	11.3	11.1	9.6	14.2	13.2	12.4	10.6	8.8	10.6	10.2	7.6	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3
DUR	4	4	3	3	4	4	5	4	3	5	4	4	6	5	5	4	4	4	3	4	5	5	3
TOT	2													2									
				(S)																			
0- 1	4.0	8.5	8.5	3.5		2.5			4.0				1.0						6.0	8.0			2.0
1- 2		6.0	5.0	10.0		2.0	1.5		6.0							4.0				6.5	2.0		9.0
2- 3		3.5	1.0	6.0	2.0	1.5		2.5	8.0		2.0								3.5	5.5		1.5	0.5
3- 4		1.5	7.0	2.0		1.5		6.0	10.5				1.0		6.0	1.0		3.5		4.0			7.0
4- 5			3.0	8.0	10.0	1.0	8.0	10.0								7.5			1.0	2.5			
5- 6	3.5		9.0	4.0		0.5			1.5										7.0	1.0			5.0
6- 7			5.0	10.0		0.0			3.5				0.5			4.5	8.5						
7- 8			1.0	6.0					6.0								7.5	3.5	4.5				3.5
8- 9		11.0	7.0	2.0					8.0							2.0	7.0			8.0			
9-10		8.5	3.0	8.0	2.0		5.0	1.5	10.0				0.5			8.0	6.0		2.0	6.5			1.5
10-11	3.5	6.5	9.0	4.0				5.5	12.5		2.0						5.5		8.5	5.5		7.0	8.0
11-12		4.0	5.0	0.0	10.0			9.5	1.5							5.0	4.5	3.5		4.0			
12-13		1.5	1.0	6.0			11.5		3.5				0.5	2.5			4.0		6.0	2.5			6.5
13-14			7.5	2.5					5.5						5.0	2.5	3.0			1.0		1.0	
14-15			3.5	8.5			2.5		8.0							8.5	2.5		3.0				4.5
15-16	3.0		9.5	4.5					10.0				0.5				1.5	3.5			6.5		
16-17			5.5	0.5	2.5			1.0	12.0							6.0	1.0		0.5	8.0			2.5
17-18		11.5	1.5	6.5			9.0	5.0	1.0								0.0		7.0	7.0			
18-19		9.0	7.5	2.5	10.5			9.0	3.5		1.5		0.5			3.0				5.5	2.5		0.5
19-20		6.5	3.5	8.5					5.5									3.5	4.5	4.0			7.5
20-21	2.5	4.5	9.5	4.5					7.5							0.5				2.5			
21-22		2.0	5.5	0.5					9.5	2.5			0.0	6.0		6.5			2.0	1.0		6.5	5.5
22-23			1.5	6.5			6.5		12.0										8.0				
23-24			7.5	2.5	2.5			0.5	1.0						4.0	4.0		3.0					3.5
24-25			4.0	9.0				4.0	3.0				0.0						5.5	8.0		0.0	
25-26	2.5		10.0	5.0	11.0			8.0	5.0			12.5				1.0				7.0			2.0
26-27		12.0	6.0	1.0				12.0	7.5		1.5					7.5			3.0	5.5			8.5
27-28		9.5	2.0	7.0			3.5		9.5				0.0					3.0		4.0			
28-29		7.0	8.0	3.0					11.5	0.0						4.5			0.5	2.5			6.5
29-30		4.5	4.0	9.0					0.5										7.0	1.0			
30-31	2.0	2.5	0.0	5.0	3.0		10.0		3.0							2.0							5.0

AAVSO Eclipsing Binary Ephemeris for October 2020 all times in U.T.
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	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 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	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM
MAX	9.7	10.8	10.8	10.8	8.3	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	9.8	8.4	8.4	9.6	10.2
MIN	10.3	11.9	11.6	11.6	9.2	8.7	14.6	12.7	12.5	10.8	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
DUR	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	3	3	5	4
TOT								2							1				1			1	
				(S)		(S)											(S)				(S)		
0- 1	3.5			6.5							1.0	3.5	8.0							7.0			12.0
1- 2							1.0								7.0				5.0	6.5			
2- 3							4.5		3.0					2.0		9.0		2.5		5.5			
3- 4		7.5		1.0			8.0			4.5	5.0	7.0	1.0	4.5						4.5			
4- 5		5.0			7.5							1.5	9.5	7.0	2.5		0.0				7.5		5.5
5- 6	7.0	2.5	3.0			0.5	1.0		0.0												7.0		11.5
6- 7	3.5						4.5												10.5		6.0		
7- 8	0.0			5.5			8.0				4.0	5.0	2.5	1.0			6.5				5.0		
8- 9													11.0	3.5				2.5					
9-10			7.5		0.0		1.0			3.5				6.0						7.5			
10-11				0.0			4.5							8.5						6.5			11.0
11-12	7.5	8.0					7.5				3.5	2.5	4.5							5.5			
12-13	4.0	5.5	2.0			1.5								0.0	12.5	4.0				4.5		12.0	
13-14	0.5	3.0					0.5							2.5									
14-15		0.0		4.5			4.0					6.0		5.0				2.5	6.0		7.0		
15-16							7.5			2.5	2.5	0.5	6.0	7.5	7.5	10.0					6.0	8.5	10.0
16-17			6.5		1.0					7.0											5.0		
17-18	7.5						0.5	3.0									1.0						
18-19	4.0						4.0				6.5	4.0		1.5	3.0					7.5		5.5	
19-20	1.0	8.5	1.0			2.5	7.5				1.5		8.0	4.0					11.0	6.5			
20-21		6.0												6.5			7.5	2.5		5.5			9.5
21-22		3.5		3.5			0.5			1.5				9.0						5.0			
22-23		0.5					4.0		5.5	6.0	6.0	2.0	1.0										
23-24	8.0		5.5		2.0		7.5				1.0		9.5	0.5							7.0		
24-25	4.5													3.0							6.0		
25-26	1.0			7.5			0.5		2.5			5.0		5.5		5.0					5.0		9.0
26-27			0.0			3.5	4.0				5.0		3.0	8.0				2.0					
27-28							7.0			0.5			11.5						6.5	7.5			
28-29		6.5		2.5						5.0						11.0				6.5			
29-30		4.0					0.5					3.0		2.0	8.5					5.5			
30-31	5.0	1.0	4.5		3.0		3.5				4.0		4.5	4.5			2.5			5.0			8.5

	SZ HER	TU HER	UX HER	CC HER	CT HER	AV 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	RR LEP	SS LIB	RY LYN	UZ LYR	EW LYR
MAX	10.2	10.6	8.9	9.5	9.9	10.2	11.0	10.5	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4	9.5	10.6	10.2	10.4	11.9	9.8	11.2
MIN	12.0	13.4	9.8	12.8	11.2	10.6	12.0	11.0	10.0	10.0	12.3	9.5	11.0	11.0	12.7	12.7	10.2	11.7	10.9	11.3	13.3	11.0	13.6
DUR	4	5	5	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	4	6	4	5	5
TOT		1																					
										(S)				(S)									
0- 1	4.5							11.5	4.5	0.5	8.0			8.5									1.5
1- 2	0.5		0.5						4.0	7.0	9.5		4.0									1.5	
2- 3					0.5	9.0			3.0	6.5					8.5						6.0		0.5
3- 4									2.0	5.5		1.5		10.5				9.5		0.5			
4- 5		4.0	3.0			10.0			1.0	4.5			6.0			9.0		12.0	11.0				
5- 6	2.5								0.0	3.5									9.0				
6- 7						11.5			7.0	2.5		6.5							7.0				
7- 8							11.0		6.0	2.0			8.0		9.5								
8- 9									5.0	1.0				2.0									
9-10	4.5								4.0	7.5						10.0					10.5		
10-11	0.0								3.5	6.5			10.0										
11-12								11.0	2.5	6.0	2.0	2.0		4.0									
12-13								12.0	1.5	5.0	3.5				11.0						7.0		
13-14									0.5	4.0	5.5		12.0										
14-15	2.5								7.5	3.0	7.0	7.0		6.0		11.0						7.5	
15-16							11.0		6.5	2.0	9.0		1.0					9.5	10.5				
16-17									5.5	1.5	10.5							11.5	8.5			5.0	
17-18						10.0			4.5	0.5				8.0					6.5				
18-19	4.5		1.5	1.5	2.0				3.5	7.0			3.0									2.0	
19-20	0.0					11.0			3.0	6.5		2.5				12.0					11.5		
20-21		1.0							2.0	5.5				10.0									
21-22			4.0			12.0			1.0	4.5			5.0										
22-23									0.0	3.5		7.5									8.5		
23-24	2.5						10.5	11.0	7.0	2.5				12.0									
24-25								12.0	6.0	1.5			7.0										
25-26				0.0					5.0	1.0	1.0			1.0					12.5				
26-27									4.0	7.5	3.0								10.5	0.5			
27-28	4.5				0.5				3.5	6.5	4.5	3.0	9.0				9.5	9.0	8.5				
28-29	0.0								2.5	6.0	6.5			3.0				11.5	6.5				
29-30		2.5							1.5	5.0	8.0												
30-31						9.5			0.5	4.0	10.0	8.0	11.0				9.5						

	FL	RU	RU	RW	AT	BB	BO	U	SX	V508	V839	1010	EQ	ER	ER	ET	FL	FT	FZ	FZ	GU	GU	U
	LYR	MON	MON	MON	MON	MON	MON	OPH	OPH	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	PEG
MAX	8.7	10.6	10.6	9.1	10.6	10.6	10.8	5.8	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
MIN	9.5	11.3	11.3	11.9	11.4	11.3	12.1	6.5	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
DUR	4	5	5	5	5	4	5	5	5	3	3	4	4	3	3	5	3	4	3	3	4	4	3
TOT				1			1																
			(S)												(S)					(S)		(S)	
0- 1						12.0									5.5					5.5	7.5		1.5
1- 2				7.5						0.5				7.0			7.0		5.5		6.0		4.5
2- 3										1.5	0.5		10.0		8.5					5.5		10.5	7.5
3- 4						10.0				2.0				10.0					5.5			9.0	1.5
4- 5										3.0	1.5			6.0			9.0			5.5		7.5	4.5
5- 6										4.0					7.5				5.5			6.5	7.0
6- 7	3.5					8.5				4.5	3.0	1.5		9.0						5.5	10.5		1.0
7- 8							8.5										11.5		5.5		9.0		4.0
8- 9											4.0	1.5			6.5					5.5	7.5		7.0
9-10													10.0	8.0				7.0	5.5		6.5		1.0
10-11			8.5									1.0			9.5	12.0				5.5		10.5	4.0
11-12						11.5				0.5	0.5				6.0	11.0			5.5			9.0	7.0
12-13										1.5		0.5		7.0		9.5		10.5		5.5		7.5	1.0
13-14										2.0	1.5				8.5	8.5			5.5			6.5	4.0
14-15						10.0				3.0		0.0		10.0		7.5				5.5	10.5		7.0
15-16										3.5	3.0			6.5		6.0	6.0		5.5		9.0		1.0
16-17		8.0								4.5			9.5		7.5	5.0				5.5	7.5		4.0
17-18	1.0				7.5	8.5					4.0			9.0					5.5		6.5		7.0
18-19				11.0			11.5							5.5			8.0			5.5		10.5	1.0
19-20	5.5				8.0										7.0				5.5			9.0	4.0
20-21				9.0							0.5			8.5						5.5		7.5	7.0
21-22					9.0					0.5					9.5		10.5		5.5			6.5	1.0
22-23				6.5		11.5				1.0	1.5				6.0					5.5	10.5		4.0
23-24		12.0			9.5					2.0			9.0	7.5					5.5		9.0		7.0
24-25									0.5	3.0	2.5				9.0					5.5	8.0		1.0
25-26					10.5	10.0		0.0		3.5									5.5		6.5		4.0
26-27										4.5	4.0			6.5						5.5		10.5	7.0
27-28					11.0		9.5								8.0				5.5			9.0	1.0
28-29						8.0								9.5				5.0		5.5		8.0	4.0
29-30					11.5						0.5			5.5					5.5			6.5	7.0
30-31	2.5							1.0					8.5		7.0	11.5				5.5	10.5		1.0

	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	UZ PUP	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	CC SER	CC SER	RW TAU
MAX	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	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8.0
MIN	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	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5
DUR	3	6	12	3	3	3	2	4	6	4	5	4	8	7	4	4	6	5	4	4	4	4	4
TOT			4						2		1						2						1
	(S)				(S)											(S)						(S)	
0- 1	6.0			7.0	2.5	5.0	10.0				9.0	1.5	5.5								0.5		8.0
1- 2	9.0			0.5	4.5	1.5	3.0		11.5	9.5		5.0				9.0				0.0	1.5		
2- 3	3.0			2.5	6.5	4.0				6.0		8.5						0.5	2.0		2.5		
3- 4	6.0			4.5	0.0	0.5	6.0			2.5	0.5	12.5	2.0		9.0								2.5
4- 5	9.0			6.5	2.0	3.5																	
5- 6	2.5			8.5	4.0	6.5	9.5									8.5							
6- 7	5.5			2.0	6.0	2.5	2.5			12.0									0.5				
7- 8	8.5			4.0	8.0	5.5				8.5					8.5								
8- 9	2.5			6.0	1.5	1.5	5.5			5.0	7.5	3.0		5.5						1.0		0.5	
9-10	5.5			8.0	3.5	4.5				1.0		6.5						3.0				1.5	
10-11	8.5			1.0	5.5	0.5	9.0					10.0										2.0	
11-12	2.5			3.5	7.5	3.5	2.0										3.0		2.0				9.5
12-13	5.5			5.5	1.0	6.5				10.5						12.5							
13-14	8.5			7.5	3.0	2.5	5.5			7.0													
14-15	2.5	2.0		0.5	5.0	5.5		10.5		3.5					12.0								4.0
15-16	5.5			2.5	7.0	2.0	8.5	9.5										1.0	1.0	2.0			
16-17	8.5			4.5	0.5	4.5	1.5	9.0			6.5	4.5				11.5					0.5		
17-18	2.5	4.5		7.0	2.5	1.0		8.5				8.0	10.0								1.5		
18-19	5.5			0.0	4.5	4.0	5.0	8.0		9.5		11.5			11.5						2.0		
19-20	8.5			2.0	6.5	0.0		7.5		6.0													
20-21	2.5	6.5		4.0	8.5	3.0	8.0	7.0		2.0			7.0			11.0			2.5				
21-22	5.5			6.0	2.0	6.0	1.0	6.0															
22-23	8.5			8.0	4.0	2.0		5.5							11.0			3.0		2.5			11.5
23-24	2.5	9.0		1.5	6.0	5.0	4.5	5.0		11.5		2.0	4.0	7.0									
24-25	5.5			3.5	8.0	1.0		4.5		8.0	5.0	6.0				10.5			1.0			0.5	
25-26	8.5			5.5	1.5	4.0	7.5	4.0		4.5		9.5										1.5	6.0
26-27	2.5			7.5	3.5	0.5	1.0	3.5		1.0			0.5		10.0							2.0	
27-28	5.5		1.0	1.0	5.5	3.0		2.5						1.0									
28-29	8.5			3.0	7.5	6.0	4.0	2.0								10.0	1.0	1.0					
29-30	2.5			5.0	0.5	2.5		1.5		10.5	12.0								2.5				
30-31	5.5			7.0	3.0	5.0	7.5	1.0		7.0					9.5					0.5			

	RZ TAU	TY TAU	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	W UMA	TY UMA	TY UMA	UX UMA	VV UMA	XZ UMA	ZZ UMA	RU UMI	AG VIR	Z VUL	AW VUL	AX VUL	AY VUL
MAX	10.5	11.5	11.5	10.5	10.4	10.3	10.3	10.9	8.9	11.4	9.1	11.7	11.7	12.7	10.1	10.1	9.8	10.7	8.8	7.4	10.8	11.0	11.0
MIN	11.2	12.0	11.7	12.3	12.3	11.0	11.0	11.9	12.0	12.5	9.9	12.4	12.4	13.8	11.0	11.7	11.2	11.4	9.4	9.2	11.9	12.5	12.9
DUR	3	2	4	6	5	3	3	4	4	4	3	3	3	1	3	3	4	4	4	6	5	5	4
TOT							(S)						(S)										
0- 1	7.5		6.5			3.5	8.0	6.0	3.5	4.5	7.0		0.0					2.5					2.5
1- 2	3.5			11.5		4.5		10.0	3.0		7.0		2.0		11.5	8.5		3.5					
2- 3	9.5		8.0			5.0			2.0	11.0	7.0						5.5	5.0	12.0		6.0		
3- 4	5.5					5.5		4.0	1.5	5.0	7.0	0.5						6.0			1.0		
4- 5			10.0			6.0		8.0	0.5		7.0	2.0			5.5			7.5					
5- 6	7.5					6.5	2.5	12.0		11.5	7.0		8.0	2.5				8.5					
6- 7			12.0			7.0	3.0	2.5		5.5	7.0		1.0		7.0			9.5			6.5		
7- 8	9.0	4.0	4.5			7.5	3.5	6.5			7.0			2.0		11.5		11.0			2.0		
8- 9	5.0	6.0					4.0	10.5		11.5	7.0	8.0			8.5			12.0					
9-10		8.0	6.5				5.0	0.5		6.0	7.0	1.0		1.0			3.0	0.5				0.0	
10-11	7.0	9.5					5.5	4.5			7.0				10.0			2.0			7.5		
11-12		11.5	8.5				6.0	8.5		12.0	7.5		0.0	0.5			10.0	3.0	12.0		3.0	1.0	
12-13	9.0					2.5	6.5			6.0	7.5		1.5		11.5	8.5		4.0					4.0
13-14	5.0		10.0			3.0	7.0	3.0		0.0	7.5							5.5				1.5	
14-15					5.5	3.5	7.5	7.0		12.5	7.5	0.5						6.5		6.0			
15-16	6.5		12.0			4.0		11.0		6.5	7.5	2.0			5.5			8.0			3.5	2.0	
16-17			5.0		6.5	4.5		1.0		0.5	7.5		7.5	3.0			0.5	9.0					
17-18	8.5					5.5		5.0			7.5		0.5		7.0			10.0				2.5	
18-19	4.5		6.5		7.5	6.0		9.0		7.0	7.5		2.0	2.0		11.5	7.5	11.5					
19-20						6.5	2.5			1.0	7.5	8.0			8.5			0.0		4.0	4.5	3.0	
20-21	6.5		8.5		8.5	7.0	3.0	3.5			7.5	1.0		1.5				1.0	12.0				
21-22		4.0				7.5	3.5	7.5	12.5	7.0	7.5				10.0			2.5				3.5	
22-23	8.5	6.0	10.5		9.5	8.0	4.0	11.5	11.5	1.5	7.5		8.5	0.5				3.5					
23-24	4.5	8.0					4.5	1.5	11.0		7.5		1.5		11.5	8.5		5.0			5.0	4.5	
24-25		10.0	12.5		10.5		5.0	5.5	10.5	7.5	7.5							6.0		1.5	0.5		5.5
25-26	6.0	11.5	5.0				6.0	10.0	9.5	1.5	7.5	0.0					5.0	7.0				5.0	
26-27					11.5	2.5	6.5		9.0		7.5	1.5			5.5			8.5					
27-28	8.0		7.0			3.0	7.0	4.0	8.5	8.0	7.5						12.5	9.5			6.0	5.5	
28-29	4.0					3.5	7.5	8.0	7.5	2.0	7.5		0.5		7.0	6.0		11.0			1.0		
29-30	10.0		8.5			4.0	8.0	12.0	7.0		7.5		2.0	2.5		11.5		12.0	12.0			6.0	1.0
30-31	6.0					4.5		2.0	6.5	8.0	7.5	8.0			8.5			0.5					

	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			6.5		2.0	0.0
1- 2			5.5		5.5	
2- 3	2.0		4.0			1.5
3- 4			3.0	2.5		
4- 5		6.0	2.0	5.5	1.5	2.5
5- 6	4.5		0.5		5.0	
6- 7		4.5				4.0
7- 8						
8- 9	7.0	3.5			1.5	5.0
9-10					4.5	
10-11		2.0	6.5		8.0	6.5
11-12			5.0	2.0		
12-13		0.5	4.0	5.5	1.0	7.5
13-14			3.0		4.0	0.0
14-15			1.5		7.5	
15-16			0.5			1.5
16-17	1.0				0.5	
17-18					4.0	2.5
18-19					7.0	
19-20	3.5			1.5		3.5
20-21			6.5	5.0	0.0	
21-22			5.0		3.5	5.0
22-23	6.0		4.0		6.5	
23-24			3.0			6.0
24-25			1.5			
25-26			0.5		3.0	7.5
26-27					6.5	
27-28				1.5		
28-29				5.0		1.0
29-30					2.5	
30-31	0.5		6.0		6.0	2.5

AAVSO Eclipsing Binary Ephemeris for November 2020 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			1.5	11.0		3.0	7.0		7.5	2.5	7.0	11.0				3.0							4.5
1- 2	4.0			3.5		3.0	7.0		7.0	1.0	12.0	11.0			2.5							0.0	0.0
2- 3	10.5				4.5	2.5	6.5		7.0	10.5	3.0	11.5			5.0							2.5	5.5
3- 4	1.5		0.5	6.0		2.5	6.5		6.5	8.5	8.0	11.5											1.0
4- 5	7.5					2.5	6.5		6.0	6.5		12.0						0.0		1.0			6.0
5- 6				8.0		2.5	6.5		6.0	5.0	4.0							0.5					1.5
6- 7	5.0		0.0	0.5	6.0	2.5	6.5		5.5	3.0	9.5		0.0		2.5	3.5		1.0					6.5
7- 8				10.0		2.0	6.0		5.0	1.5			0.5		5.0	0.5		1.0			1.0		2.0
8- 9	2.5			2.5		2.0	6.0		5.0		5.5		0.5				1.5	1.5					7.5
9-10	8.5					2.0	6.0		4.5	9.0	10.5		1.0					1.5					3.0
10-11				4.5	8.0	2.0	6.0		4.0	7.0	1.0		1.0					2.0					8.0
11-12	5.5					2.0	6.0		4.0	5.5	6.5		1.5		2.5			2.5					3.5
12-13				7.0		1.5	5.5		3.5	3.5	12.0		1.5	4.5	5.5	4.5		2.5				1.5	9.0
13-14	3.0				1.0	1.5	5.5		3.0	2.0	2.5		2.0			1.5		3.0				4.0	4.5
14-15	9.0			9.0	9.5	1.5	5.5		3.0	0.0	7.5		2.0	3.5				3.5					9.5
15-16	0.5			1.5		1.5	5.5		2.5	9.5			2.5		0.0			3.5					5.0
16-17	6.5		10.0	11.0		1.5	5.5		2.0	7.5	3.5		2.5	3.0	2.5			4.0					0.5
17-18				3.5	3.0	1.0	5.0		2.0	6.0	9.0		3.0		5.5								6.0
18-19	4.0				11.5	1.0	5.0		1.5	4.0			3.0	2.0		5.5					2.5		1.5
19-20	10.0		9.0	6.0		1.0	5.0		1.0	2.0	5.0		3.5			2.5							6.5
20-21	1.0					1.0	5.0		1.0	0.5	10.0		4.0	1.0	0.0								2.0
21-22	7.0			8.0	4.5	1.0	5.0		0.5	10.0	1.0		4.0		3.0								7.0
22-23		2.0	8.5	0.5		0.5	4.5		0.0	8.0	6.0		4.5	0.5	5.5							0.5	2.5
23-24	4.5			10.0		0.5	4.5			6.0	11.5		4.5				0.5		0.0			3.0	8.0
24-25	10.5			2.5		0.5	4.5			4.5	2.0		5.0						0.5				3.5
25-26	2.0		8.0		6.5	0.5	4.5			2.5	7.5		5.0		0.0	3.5			1.0				8.5
26-27	8.0	5.0		4.5		0.0	4.0			1.0			5.5		3.0				1.0				4.0
27-28						0.0	4.0	10.5		10.0	3.0		5.5		5.5				1.5				9.5
28-29	5.5		7.0	7.0		0.0	4.0	10.0		8.5	8.5		6.0						2.0				5.0
29-30					8.0	8.0	4.0	9.5		6.5			6.0						2.0		4.0		0.5

	SS ARI	WW AUR	WW AUR	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	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	10.1	5.7	5.7	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	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	11.1	6.4	6.4	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	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	3	5	5	4	4	5	5	4	3	3	3	3	3	3	3	5	6	3	5	5	5	4	5
TOT																							
	(S)		(S)		(S)		(S)				(S)		(S)		(S)						(S)		
0- 1	9.5			6.0	13.0				4.0						0.5			11.5	10.0		5.0		
1- 2	5.0			9.5					8.5	6.5		0.5						1.5		8.5			
2- 3	0.5			12.5	6.0				13.0							10.5	4.5	6.0		2.5	12.0		
3- 4	5.5	6.5			9.0			2.0	3.0		9.5							10.5	1.5		6.0	7.5	10.5
4- 5	1.0		12.5	5.5	12.5			8.0	7.5	2.5				0.5				0.5	9.5	9.5	0.5	11.0	
5- 6	6.5			9.0					12.0	13.0							12.0	5.0		4.0			
6- 7	2.0			12.5	5.5						6.0							9.5			7.5		
7- 8	7.0				9.0				6.5							10.5			1.5	11.0	2.0		8.0
8- 9	2.5	7.5		5.5	12.0			1.5	10.5	9.0		0.0			1.0			4.5	9.0	5.5				
9-10	8.0			8.5				7.5			2.0							9.0			9.0		
10-11	3.5			12.0	5.0				5.0		12.5									12.5	3.0		
11-12	8.5				8.5				9.5	5.5			0.5		0.5			3.5	1.0	6.5		6.5	5.0
12-13	4.0		2.5	5.0	12.0									1.0		10.0	2.5	8.0	9.0	1.0	10.0	10.0	12.0
13-14	9.0	8.5		8.5					4.0		8.5							12.5			4.5		
14-15	4.5			11.5	5.0		1.5	7.0	8.5	1.5		0.5						2.5		8.0			
15-16	0.0				8.0			12.5	13.0	12.0				0.5			10.0	7.0	0.5	2.5	11.5		
16-17	5.5			4.5	11.5	3.0			3.0		5.0							11.5	8.5		6.0		9.0
17-18	1.0		3.5	8.0					7.5									2.0		9.5	0.5		
18-19	6.0	10.0		11.5	4.5		4.5		12.0	8.0								6.5		4.0	13.0		
19-20	1.5				8.0			6.5			1.0				1.0			10.5	0.5		7.5		
20-21	7.0			4.5	11.0	6.0		12.0	6.5		11.5							1.0	8.0	11.0	1.5	8.5	6.5
21-22	2.5			7.5					10.5	4.5		0.0						5.5		5.0		12.0	
22-23	7.5		5.0	11.0	4.0		8.0								0.0		0.5	10.0			8.5		
23-24	3.0	11.0			7.5				5.5		7.5			1.0				0.0		12.0	3.0		
24-25	8.5			4.0	11.0	9.5		5.5	9.5				0.5					4.5	8.0	6.5			
25-26	4.0			7.5				11.5		11.0							8.0	9.0		1.0	10.0		10.5
26-27	9.0			10.5	4.0		11.0		4.0		4.0			0.5							4.5		
27-28	4.5		6.0		7.0				8.5			1.0						4.0		8.0			
28-29	0.0	12.5		3.5	10.5	12.5			13.0	7.0								8.0	7.5	2.0	11.5	7.5	
29-30	5.0			7.0				5.0	3.0									12.5			5.5	11.0	7.5

	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	PV CAS	V364 CAS	V364 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	10.0	11.2	11.2
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	10.6	11.7	11.7
DUR	4	4	4	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4
TOT				(S)										(S)							(S)		(S)
0- 1		7.5	5.5		11.0		12.5			1.0			2.0	6.0		1.0		9.0	4.5				
1- 2		10.5				7.0				6.0	6.0		1.0	5.0	6.5	9.5	6.5		10.5				8.0
2- 3						11.0	5.5			10.5		5.5	7.5	4.0	1.5	2.0				11.0		2.5	
3- 4							8.5		2.0		1.5		6.5	3.0		10.5	2.5				8.5		
4- 5							11.5						5.5	1.5	10.0	3.0				5.0			10.0
5- 6						8.5							4.5	0.5	5.0			0.5	4.0		2.5	4.5	
6- 7	11.5					12.0				0.5		8.0	3.5	7.5		4.0		4.0	10.0				
7- 8							7.5			5.0			2.5	6.5				8.0					
8- 9						6.0	11.0			10.0	12.0		1.5	5.0	8.0	5.0		12.0				7.0	
9-10		8.0				9.5						1.5	0.5	4.0	3.0					11.0			1.5
10-11		11.0						2.0			7.5	10.5	7.0	3.0		6.0	11.5		4.0		8.5		
11-12	8.5				7.0		6.5						6.0	2.0	11.5				9.5	5.0		9.0	
12-13						7.0	10.0				3.0		5.0	1.0	6.5	7.0	7.5				2.5		3.5
13-14					11.0	11.0			1.5	4.5		4.0	4.0	7.5	1.5			3.0					
14-15										9.5		13.0	3.0	6.5		8.0	4.0	7.0				11.0	
15-16			12.5				6.0						2.0	5.5	10.0	0.5		10.5	3.5				5.5
16-17						8.0	9.0						0.5	4.5	4.5	9.0			9.0	11.0			
17-18				12.0		12.0	12.0					6.5	7.5	3.5		1.5					8.5		
18-19		8.5											6.5	2.5		10.0				5.0			7.5
19-20	11.5	11.5	8.5			5.5				4.0	9.0		5.0	1.5	8.0	2.5					2.5	2.0	
20-21						9.5	8.0			9.0		0.0	4.0	0.5	3.0			2.0	3.0				
21-22				7.5			11.0				4.5	9.0	3.0	7.0		3.5	12.5	5.5	9.0				9.5
22-23													2.0	6.0	11.5			9.5				4.0	
23-24						7.0			0.5		0.0		1.0	5.0	6.0	4.5	9.0			11.0			
24-25	8.5				7.0	10.5	7.0					2.5	0.0	4.0	1.0						8.5		11.5
25-26							10.0			3.5		11.5	6.5	3.0		5.5	5.0		2.5	5.0		6.0	
26-27		6.0			11.0					8.0			5.5	2.0	9.5				8.5		3.0		0.5
27-28		9.0				8.0		1.0		13.0			4.5	0.5	4.5	6.5	1.0	0.5					
28-29		12.0				12.0	6.0				10.5	5.0	3.5	7.5				4.5				8.0	
29-30							9.5						2.5	6.5		7.5		8.5					2.5

	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP	DL CEP	DV CEP	EG CEP	SS COM	SS COM	RW CRB	RV CRV	V CRT	SW CYG	WW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG
MAX	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	10.9	10.9	10.1	9.0	9.5	9.3	9.9	10.7	11.8	9.4	11.0	10.3	11.5
MIN	10.9	9.8	9.8	11.3	11.1	9.6	14.2	13.2	12.4	10.6	11.5	11.5	10.6	10.0	10.2	11.8	13.2	12.0	12.8	10.5	11.8	10.8	12.6
DUR	5	4	4	3	3	4	4	5	4	3	4	4	4	4	4	5	5	4	4	4	3	4	5
TOT		2														2							
					(S)							(S)											
0- 1				6.0	1.0				3.5	5.0										3.0	4.0		
1- 2				2.0	7.0	11.0		1.0	7.5	7.0					13.0								
2- 3	5.5			8.0	3.0				11.5	9.5							2.5	5.5			1.5	7.0	
3- 4				4.0	9.0					11.5												5.5	
4- 5		1.5		0.0	5.0			7.5		0.5			12.0					2.5		3.0		4.0	3.5
5- 6	4.0		9.5	6.5	1.5					2.5											5.5	2.5	
6- 7			7.5	2.5	7.5	3.0				5.0					10.5							1.0	
7- 8			5.0	8.5	3.5				3.0	7.0								6.0			3.0		
8- 9	2.5		2.5	4.5	9.5	11.5			6.5	9.0										3.0			
9-10		1.5	0.5	0.5	5.5			4.5	10.5	11.0		10.0						3.0	6.5		0.5		
10-11				6.5	1.5					0.5									5.5		6.5	7.0	
11-12	1.5			2.5	7.5					2.5			1.0					0.5	5.0			5.5	
12-13	13.0			8.5	3.5		11.5	11.0		4.5			12.0				1.5	6.5	4.0	3.0	4.0	4.0	
13-14				4.5	9.5	3.5	11.0			6.5					11.0	2.5			3.5			2.5	
14-15	0.0	1.0		0.5	5.5		10.5	2.0	2.0	9.0								4.0	2.5		1.5	1.5	
15-16	11.5		7.5	6.5	1.5	11.5	10.5		6.0	11.0	9.5								2.0				
16-17		13.0	5.5	3.0	8.0		10.0		10.0	0.0								1.0	1.5	3.0			
17-18			3.0	9.0	4.0		9.5	8.5		2.0									0.5		5.0		
18-19	10.0		0.5	5.0	10.0		9.5			4.5												7.0	
19-20		0.5		1.0	6.0		9.0			6.5			0.5					4.5			2.5	5.5	
20-21				7.0	2.0	4.0	8.5			8.5					11.5					3.0		4.0	
21-22	9.0	12.5		3.0	8.0		8.5		1.5	11.0								2.0			0.0	2.5	4.5
22-23				9.0	4.0	12.0	8.0	6.0	5.5	13.0	10.0			13.0		6.0	0.5				6.5	1.5	
23-24				5.0	0.0		7.5		9.5	2.0													
24-25	7.5	0.5	8.0	1.0	6.0		7.5			4.0								5.5		3.0	4.0		0.5
25-26			5.5	7.0	2.0		7.0			6.5				12.5									
26-27		12.0	3.5	3.0	8.0		6.5			8.5								2.5			1.5	7.0	
27-28	6.5		1.0	9.5	4.5	4.0	6.5	3.0		10.5			0.5		12.0							5.5	
28-29				5.5	0.5		6.0		1.0	12.5		9.5		12.5						2.5		4.0	
29-30		0.0		1.5	6.5	12.0	5.5		4.5	2.0								6.0			5.0	3.0	

	V346 CYG	V387 CYG	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 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	TZ ERI	YY ERI	YY ERI
MAX	11.8	11.5	9.7	10.8	10.8	10.8	8.3	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	9.8	8.4	8.4
MIN	13.6	12.3	10.3	11.9	11.6	11.6	9.2	8.7	14.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12.6	9.1	9.1
DUR	5	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	3	3
TOT										2							1				1		
						(S)		(S)											(S)				(S)
0- 1			1.5						7.0							7.0						4.0	
1- 2	5.5	3.0															4.0			2.0	12.0	3.0	7.0
2- 3								4.5	0.0					1.0		11.5			8.5				6.0
3- 4		1.0							3.5			4.0	3.5		6.0	1.0				11.5			5.5
4- 5						1.0			7.0							3.5					2.5		4.5
5- 6			5.0											4.5		6.0						7.5	3.5
6- 7		6.0	2.0	4.5	3.5		4.0		0.0													6.5	2.5
7- 8				1.5					3.5				2.5		8.0			6.0		2.0		5.5	
8- 9		4.0				5.5			7.0													5.0	
9-10								5.5				2.5		2.0		2.5				11.5	7.5	4.0	
10-11		2.0								4.0					1.0	5.0		12.0				3.0	7.0
11-12			5.5			0.0			3.5				1.5		9.5								6.0
12-13	5.0	0.0	2.0						6.5								9.5		3.5				5.5
13-14		7.0			2.5		5.0							0.0		12.0				1.5			4.5
14-15				5.0							4.5				3.0	1.5						7.5	3.5
15-16		5.0		2.0		4.5			3.0			1.5	1.0		11.5	4.0	4.5		9.5	11.0		6.5	2.5
16-17									6.5					3.5		6.0						5.5	
17-18		3.0	6.0								1.5							1.0			3.0	5.0	
18-19			2.5										5.0		4.5	11.0	0.0					4.0	
19-20		1.5							3.0							0.5				1.5		3.0	7.0
20-21					1.5				6.5					1.5		3.0		7.0					6.0
21-22												0.5				5.0				11.0			5.5
22-23		6.0		5.5		3.5						5.0	4.0		6.5						8.0		4.5
23-24	4.5			2.5					3.0					4.5								7.5	3.5
24-25		4.5	2.5	0.0	5.5				6.5							12.5						6.5	3.0
25-26																2.0			4.5	1.5		6.0	
26-27		2.5											3.5		8.0	4.0	10.0					5.0	
27-28					0.5				3.0					2.5		6.5				11.0		4.0	
28-29		0.5						0.0	6.0			4.0							10.5			3.0	7.0
29-30						2.5									1.0	11.5	5.5					2.5	6.0

	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	UV LEO	VZ LEO	T LMI
MAX	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	9.5	10.6	10.2
MIN	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	10.2	11.7	12.6
DUR	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	6
TOT	1			1																			
										(S)				(S)				(S)					
0- 1											10.5		7.5	3.0				5.0					
1- 2			2.5		0.0			10.5					6.5	2.0			0.0						8.0
2- 3												9.0	5.5	1.5							9.5		
3- 4								12.0			12.5	10.0	4.5	0.5				7.0	9.0				
4- 5	10.0	8.0			2.5							11.0	3.5	7.0		3.5	2.0						8.5
5- 6											8.5	12.0	3.0	6.0						7.0	9.5		
6- 7			0.0										2.0	5.5				9.0					
7- 8	6.5												1.0	4.5			4.0					6.5	9.0
8- 9											10.5		0.0	3.5	0.0				10.5		9.5	9.0	
9-10		7.0								8.0			7.0	2.5	2.0							11.0	
10-11	3.5	13.0	2.5					8.0		7.5			6.0	1.5	4.0		6.0			8.0			9.5
11-12										7.5	12.0		5.0	1.0	5.5			0.0			9.5		
12-13								9.0		7.0			4.0	7.5	7.5	4.5							
13-14										7.0	8.5		3.0	6.5			8.0		12.0				9.5
14-15		6.5						10.5		7.0		9.0	2.5	6.0				2.0			9.5		
15-16		12.5	0.0							6.5		10.0	1.5	5.0						9.0			
16-17								11.5		6.5	10.0	11.0	0.5	4.0			10.0						10.0
17-18										6.0		12.0	7.5	3.0				4.0			9.5		
18-19					1.0			12.5					6.5	2.0									
19-20		6.0	2.5								12.0		5.5	1.0								6.5	10.5
20-21		11.5				0.5							4.5	0.5		5.0		6.0		10.0	9.5	8.5	
21-22							1.0				8.0		3.5	7.0			1.0					11.0	
22-23													3.0	6.0								13.0	11.0
23-24				1.0				7.5					2.0	5.5	1.5			8.0			9.5		
24-25	11.5	5.5	0.0								10.0		1.0	4.5	3.0		3.0						
25-26		11.0						8.5					0.0	3.5	5.0	0.5			7.0	11.0			11.5
26-27												9.0	7.0	2.5	6.5			10.0			9.5		
27-28	8.0							10.0			11.5	10.0	6.0	1.5	8.5		5.5						
28-29			2.5									11.0	5.0	0.5		5.5							12.0
29-30		4.5						11.0	8.0		8.0	12.0	4.0	7.5							9.5		

	RR LEP	RY LYN	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON	BO MON	V508 OPH	V839 OPH	EQ ORI	ER ORI	ER ORI	ET ORI	FL ORI	FT ORI	FZ ORI	FZ ORI	GU ORI	GU ORI
MAX	10.2	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	10.8	10.1	8.8	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6
MIN	10.9	13.3	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3	12.1	10.7	9.4	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5
DUR	4	4	5	5	4	5	5	5	5	4	5	3	3	4	3	3	5	3	4	3	3	4	4
TOT								1			1												
							(S)									(S)					(S)		(S)
0- 1									12.5	6.5		0.5	1.5		8.5	3.5	10.0		8.5	5.5		9.0	3.5
1- 2		9.5										1.0			5.0	10.0	9.0	7.0			5.5	8.0	
2- 3			5.5							11.0		2.0				6.0	8.0			5.5		6.5	
3- 4						6.0									7.5		6.5		12.0		5.5	5.0	10.5
4- 5		6.0	2.5	3.5			10.5								4.0	9.0	5.5	9.5		5.5		3.5	9.0
5- 6	12.0									9.5	7.0					5.5	4.5				5.5		8.0
6- 7	10.0		0.0	2.5				12.5						8.5	6.5		3.0			5.5			6.5
7- 8	8.0										12.5		0.5			8.0		12.0			5.5	10.5	5.0
8- 9	6.0			1.0				10.5		8.0					9.5	4.5				5.5		9.0	3.5
9-10	4.0												1.5		6.0						5.5	8.0	
10-11					0.0	10.0		8.0		12.5		0.5				7.5				5.5		6.5	
11-12		10.5								6.0		1.0			8.5	3.5					5.5	5.0	10.5
12-13					4.5			6.0				2.0			5.0	10.0		4.0		5.5		3.5	9.5
13-14										11.0				8.0		6.5					5.5		8.0
14-15		7.5													8.0					5.5			6.5
15-16															4.0	9.0		6.0			5.5	10.5	5.0
16-17	11.5									9.5	10.0		0.5			5.5				5.5		9.5	3.5
17-18	9.5	4.0													7.0						5.5	8.0	
18-19	7.5												1.5			8.5	12.0	8.5		5.5		6.5	
19-20	5.5									7.5					9.5	4.5	10.5		6.0		5.5	5.0	10.5
20-21												0.5		7.5	6.0		9.5			5.5		3.5	9.5
21-22		11.5	3.0							12.5		1.0				7.5	8.0	11.0			5.5		8.0
22-23							9.0			6.0		2.0			9.0	4.0	7.0		9.5	5.5			6.5
23-24			0.5		2.0										5.0		6.0				5.5	10.5	5.0
24-25		8.5								11.0						6.5	4.5			5.5		9.5	3.5
25-26											7.5		0.5		8.0		3.5				5.5	8.0	
26-27															4.5	9.5				5.5		6.5	
27-28	11.5	5.5						11.5		9.0	13.0		1.5	7.0		5.5					5.5	5.0	10.5
28-29	9.5					8.5									7.0					5.5		3.5	9.5
29-30	7.5						13.0	9.5							3.5	8.5		5.0			5.5		8.0

	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	UZ PUP	U SGE	V505 SGR	1968 SGR	AO SER	RW TAU
MAX	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	9.7	6.4	6.4	12.3	10.6	8.0
MIN	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	10.3	9.1	7.6	13.3	12.1	12.5
DUR	3	3	6	12	3	3	3	2	4	6	4	8	5	4	8	7	4	4	6	5	4	4	4
TOT				4						2			1						2				1
		(S)				(S)												(S)					
0- 1	4.0	8.5			0.5	5.0	1.5	0.5	0.5		3.0			3.5									
1- 2	7.0	2.5			2.5	7.0	4.5			1.0			3.5	7.5				9.0					
2- 3	1.0	5.5			4.5	0.0	0.5	3.5						11.0									
3- 4	4.0	8.5			6.5	2.0	3.5				13.0						9.0						
4- 5	7.0	2.5				4.0	6.5	7.0		2.5	9.0												
5- 6	1.0	5.5			2.0	6.5	2.5				5.5							8.5					7.5
6- 7	4.0	8.5			4.0		5.5				2.0		11.0		12.0								
7- 8	7.0	2.5		3.0	6.0	1.5	1.5	3.0		3.5				1.5			8.5						
8- 9	1.0	5.5				3.5	4.5					12.5		5.0				13.0					2.0
9-10	3.5	8.0			1.5	5.5	1.0	6.5			11.5		2.5	9.0	8.5			8.0					
10-11	6.5	2.0			3.5		3.5			5.0	8.0	12.0		12.5			12.5			1.5			
11-12	0.5	5.0			5.5	1.0	6.5				4.0					2.5	7.5						
12-13	3.5	8.0				3.0	3.0	3.0			0.5	11.5			5.5			12.5					
13-14	6.5	2.0			1.0	5.0	5.5			6.5								7.5					
14-15	0.5	5.0	0.0		3.0		2.0	6.0				10.5	9.5				12.0						
15-16	3.5	8.0			5.0	0.5	5.0				10.0			3.0	2.5		7.0				0.5		
16-17	6.5	2.0			7.0	2.5	1.0			7.5	6.5	10.0		6.5				11.5					9.5
17-18	0.5	5.0	2.5		0.0	4.5	4.0	2.5			3.0		1.0	10.5				6.5					
18-19	3.5	8.0		5.5	2.0	6.5	0.0					9.5					11.5						
19-20	6.5	2.0			4.5		3.0	5.5		9.0							6.5						4.0
20-21	0.5	5.0	4.5		6.5	2.0	6.0				12.5	9.0						11.0					
21-22	3.5	8.0				4.0	2.0				9.0							6.0				0.0	
22-23	6.5	2.0			1.5	6.0	5.0	2.0		10.5	5.0	8.0	8.0	1.0			10.5						
23-24	0.5	5.0	7.0		3.5		1.5				1.5			4.5						1.5			
24-25	3.5	8.0			5.5	1.5	4.0	5.0				7.5		8.0				10.5	2.0		0.5		
25-26	6.5	2.0				3.5	0.5			11.5				11.5									
26-27	0.5	5.0			1.0	5.5	3.5		8.5		11.0	7.0				4.0	10.0						
27-28	3.5	8.0			3.0		6.0	1.5	8.0		7.5												11.5
28-29	6.5	2.0			5.0	1.0	2.5		7.5		4.0	6.0						10.0					
29-30	0.5	5.0				3.0	5.5	5.0	7.0		0.5				10.5								

	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	RU UMI	AG VIR	AH VIR	AH VIR
MAX	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	10.7	8.8	9.7	9.7
MIN	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	11.4	9.4	10.2	10.2
DUR	3	2	4	6	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	4	4
TOT							(S)					(S)			(S)								(S)
0- 1	2.0		10.5			5.0	1.0	6.0	5.5	2.5	7.5	3.5								2.0	10.0	9.5	
1- 2	8.0		3.0	3.5		6.0	1.5	10.5	5.0		7.5	3.5			6.5		10.0		3.0	3.0			
2- 3	3.5		12.5			6.5	2.0	0.5	4.0	8.5	7.5	3.5			8.0	1.0				4.0			
3- 4	9.5	2.5	5.0	4.5		7.0	3.0	4.5	3.5	2.5	8.0	4.0					11.5	8.5	10.0	5.5			
4- 5	5.5	4.5				7.5	3.5	8.5	3.0		8.0	4.0		7.0		0.0	4.0			6.5			
5- 6	1.5	6.0	7.0	5.5		8.0	4.0		2.0	9.0	8.0	4.0	6.5	8.5			13.0			8.0			
6- 7	7.5	8.0				0.5	4.5	2.5	1.5	3.0	8.0	4.0			5.5	9.0	5.5			9.0			
7- 8	3.5	10.0	9.0	6.5		1.0	5.0	6.5	1.0		8.0	4.0			7.0					10.0	11.5		
8- 9	9.5	12.0				1.5	5.5	11.0	0.0	9.5	8.0	4.0	8.0			8.0	7.0	6.0	0.5	11.5			
9-10	5.5		10.5	7.5		2.0	6.5	1.0		3.5	8.0	4.0		6.0				11.5		12.5	10.0		
10-11	1.5		3.5			3.0	7.0	5.0			8.0	4.0		7.5			8.5		7.5	1.0			
11-12	7.0		12.5	8.5		3.5	7.5	9.0		9.5	8.0	4.0	9.5							2.5		9.5	
12-13	3.0		5.0			4.0	8.0			3.5	8.0	4.0			6.5		10.0			3.5			
13-14	9.0			9.5		4.5	0.5	3.0			8.0	4.0			8.0					4.5			
14-15	5.0		7.0			5.0	1.0	7.5		10.0	8.0	4.0	11.0				11.5	8.5		6.0			
15-16				10.5		5.5	1.5			4.0		4.0		6.5		0.5	4.0			7.0			
16-17	7.0		9.0			6.0	2.0	1.5				4.0		8.0			13.0			8.5	11.5		
17-18	3.0	2.5		11.5		7.0	2.5	5.5		10.5		4.0	12.5			9.0	5.5		5.0	9.5			
18-19	9.0	4.5	11.0			7.5	3.5	9.5		4.5		4.0			7.0					10.5	10.0		
19-20	5.0	6.5	3.5			8.0	4.0					4.0			0.0	8.5	7.0	6.0	12.0	12.0			
20-21		8.0	12.5			0.5	4.5	3.5		10.5		4.0		6.0				11.5		0.5			
21-22	6.5	10.0	5.5			1.0	5.0	8.0		5.0		4.0		7.5			8.5			1.5			9.0
22-23	2.5	12.0				1.5	5.5					4.0								3.0		9.5	
23-24	8.5		7.0			2.0	6.0	2.0		11.0		4.0			6.0		10.0			4.0			
24-25	4.5					2.5	7.0	6.0		5.0		4.0			7.5				2.5	5.5			
25-26			9.0			3.0	7.5	10.0				4.0					11.5	8.5		6.5	11.5		
26-27	6.5				3.5	4.0	8.0	0.0	11.0	11.5		4.0		6.5		1.0	4.0		10.0	7.5			
27-28	2.5		11.0			4.5	0.5	4.5	10.5	5.5		4.5		8.0			13.0			9.0	10.0		
28-29	8.0		3.5		4.5	5.0	1.0	8.5	10.0			4.5				9.5	5.5			10.0			
29-30	4.0		13.0			5.5	1.5		9.0	11.5		4.5			7.0					11.5			

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

AAVSO Eclipsing Binary Ephemeris for December 2020 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	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)
0- 1	2.5			9.0			4.0		5.0	4.5		6.5	0.5							5.5	0.5		
1- 2	8.5		6.5	1.5			3.5		3.0	9.5		6.5	3.0	4.0				0.5		1.0	6.0	1.0	
2- 3					1.0		3.5		1.5	0.5		7.0		1.0						6.5	1.5		7.5
3- 4	6.0			3.5	9.5		3.5	8.5		5.5		7.0							2.0	2.0	6.5		
4- 5			6.0				3.5	8.0				7.5								7.0	2.0		
5- 6	3.5			6.0			3.5	7.5	7.0	1.5		7.5	0.5							2.5	7.5		
6- 7					3.0	7.0	3.0	7.5	5.5	7.0		8.0	3.0							7.5	3.0	2.0	
7- 8	0.5		5.0	8.0		7.0	3.0	7.0	3.5			8.0								3.0	8.0		8.5
8- 9	7.0			0.5		7.0	3.0	7.0	1.5	3.0		8.5		2.0	0.0					8.5	3.5		
9-10						7.0	3.0	6.5		8.0		8.5								4.0	9.0		
10-11	4.0		4.5	2.5	4.5	7.0	3.0	6.0				9.0	0.5							9.0	4.5		
11-12						6.5	2.5	6.0	7.5	4.0		9.0	3.0			0.0				4.5		3.5	
12-13	1.5			4.5		6.5	2.5	5.5	5.5	9.5		9.5				0.5		2.0		0.0	5.0		9.5
13-14	7.5		4.0			6.5	2.5	5.0	4.0			9.5				0.5			1.0	5.5	0.5		
14-15				7.0	6.5	6.5	2.5	5.0	2.0	5.0		10.0		3.0		1.0				1.0	5.5		
15-16	5.0					6.0	2.5	4.5	0.5				0.5			1.5				6.0	1.0		
16-17			3.0	9.0		6.0	2.0	4.0		1.0			3.5			1.5				1.5	6.5	4.5	
17-18	2.0			1.5		6.0	2.0	4.0	8.0	6.5						2.0				7.0	2.0		11.0
18-19	8.5				8.0	6.0	2.0	3.5	6.0											2.5	7.0		
19-20			2.5	3.5		6.0	2.0	3.0	4.5	2.5										7.5	2.5		
20-21	5.5					5.5	1.5	3.0	2.5	7.5			0.5	3.5						3.0	8.0		
21-22				6.0	1.0	5.5	1.5	2.5	1.0				3.5	0.5						8.0	3.5	5.5	
22-23	3.0		2.0		10.0	5.5	1.5	2.0		3.5										3.5	8.5		12.0
23-24				8.0		5.5	1.5	2.0		9.0									0.0	9.0	4.0		
24-25	0.0			0.5		5.5	1.5	1.5	6.5		0.0									4.5			
25-26	6.5	1.5	1.0		3.0	5.0	1.0	1.0	5.0	5.0	0.5		1.0								5.0		0.5
26-27				2.5		5.0	1.0	1.0	3.0	10.0	0.5		3.5							5.0	0.5	7.0	
27-28	3.5					5.0	1.0	0.5	1.0	0.5	1.0			1.5						0.5	5.5		
28-29			0.5	4.5		5.0	1.0	0.0		6.0	1.0									6.0	1.0		
29-30	1.0	4.5			4.5	5.0	1.0				1.5									1.5	6.0		
30-31	7.0			7.0		4.5	0.5		7.0	2.0	1.5		1.0				0.0			6.5	1.5		2.0

	AP AUR	AP AUR	AR AUR	AR AUR	CL AUR	EP AUR	HP AUR	HP AUR	ZZ BOO	Y CAM	SV CAM	AL CAM	CD CAM	CD CAM	R CMA	RT CMA	SX CMA	TU CMA	TZ CMA	TZ CMA	UU CMA	XZ CMI	AK CMI
MAX	10.9	10.9	6.0	6.0	11.7	10.8	10.8	10.8	6.8	10.6	8.6	10.5	11.6	11.6	6.2	11.4	10.3	9.7	9.8	9.8	10.0	9.7	10.1
MIN	11.4	11.4	6.7	6.7	13.2	11.3	11.5	11.5	7.6	12.4	9.4	11.3	11.8	11.8	6.8	12.9	11.4	10.7	10.5	10.5	12.5	10.2	11.5
DUR	4	4	5	5	4	3	3	3	5	6	3	5	5	5	4	5	4	4	4	4	5	3	4
TOT		(S)		(S)				(S)						(S)						(S)			
0- 1	10.5	3.5			11.0	7.5		10.5			3.0		9.0	0.0								5.5	12.5
1- 2		7.0				12.0	3.5				7.5		3.5	13.0								9.5	
2- 3	3.5	10.0				2.0			9.5		12.0	7.0		7.0			11.5						5.0
3- 4	6.5					6.5		6.5			2.0		10.5	1.5		5.0							8.5
4- 5	10.0	3.0			4.5	11.0					6.5		5.0									7.0	11.5
5- 6		6.5			10.5	1.0	10.0			6.0	11.0			8.5				6.5				10.5	
6- 7	3.0	10.0				5.5		3.0			1.5	6.5	12.0	3.0	6.5			9.5					4.5
7- 8	6.5					9.5			9.0		5.5		6.5		9.5		8.5				7.0	4.5	7.5
8- 9	9.5	3.0					6.0				10.0		0.5	10.0		9.0			11.0			8.0	10.5
9-10	13.0	6.0			4.0	4.5					0.5			4.0							11.0	12.0	
10-11	2.5	9.5			10.0	8.5		9.5			5.0	6.5	7.5							10.5			3.5
11-12	6.0	13.0					2.5				9.5		2.0	11.0								5.5	6.5
12-13	9.5	2.5				3.0	12.5		9.0					5.5		6.0	5.0		7.0			9.5	9.5
13-14	12.5	6.0				7.5		5.5			4.0		9.0					4.0					13.0
14-15	2.5	9.0			3.5	12.0					8.5	6.0	3.5	12.5	5.0			7.0		6.0			
15-16	5.5	12.5	1.5		9.5	2.0	9.0			4.0				7.0	8.5		11.0	10.0				7.0	5.5
16-17	9.0	2.0				6.5		2.0			3.5		10.5	1.0	11.5	3.5						10.5	9.0
17-18	12.0	5.5		3.0		11.0		12.0	9.0		7.5		4.5			10.5							12.0
18-19	2.0	8.5				1.0	5.0			11.5	12.0	5.5		8.0								4.5	
19-20	5.0	12.0	5.0		3.0	5.5					2.5		12.0	2.5								8.0	4.5
20-21	8.5	1.5			9.0	10.0		8.5			7.0		6.0				8.0				7.0	12.0	8.0
21-22	12.0	5.0		6.5			1.5				11.5		0.5	9.5		7.5							11.0
22-23	1.5	8.5				4.5	11.5		8.5		1.5	5.5		4.0	4.0			4.5			11.0	5.5	
23-24	5.0	11.5	8.0			8.5		4.5			6.0		7.5		7.5			7.5				9.5	3.5
24-25	8.0	1.5			2.5						10.5		2.0	11.0	10.5			11.0					7.0
25-26	11.5	4.5		9.5	8.5	3.0	8.0			2.0	1.0			5.5		4.5	5.0						10.0
26-27	1.0	8.0				7.5		1.0			5.0	5.0	9.0									6.5	
27-28	4.5	11.5	11.0			12.0		11.0	8.5		9.5	13.0	3.0	12.5								10.5	
28-29	8.0	1.0				2.0	4.0			9.5				6.5			11.0						6.0
29-30	11.0	4.5		13.0	2.0	6.5					4.5		10.0	1.0								4.0	9.0
30-31		7.5			8.0	11.0		7.5			9.0	4.5	4.5			9.0						8.0	12.5

	TY CAP	RZ CAS	TV CAS	AB CAS	CW CAS	CW CAS	DZ CAS	IR CAS	IS CAS	MM CAS	OR CAS	PV CAS	PV CAS	V364 CAS	V364 CAS	V375 CAS	U CEP	SU CEP	WZ CEP	WZ CEP	XX CEP	DK CEP	DL 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	10.0	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4
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	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1	9.6	14.2	13.2
DUR	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3	3	4	4	5
TOT																	2						
						(S)							(S)		(S)					(S)			
0- 1			6.0		1.5	5.0	7.5				2.0					5.0			7.5	2.5		5.5	
1- 2		3.0			0.5	4.0	2.5	8.5			8.0		9.0				12.0		3.5	8.5		5.0	
2- 3		7.5	1.5	7.5	7.0	3.0		0.5				5.0			5.0				9.5	4.5		4.5	0.5
3- 4		12.5			6.0	2.0							3.0			4.0			5.5	0.5		4.5	
4- 5					5.0	1.0	6.0	1.5	10.0									6.0	1.5	6.5	4.5	4.0	
5- 6				1.0	4.0	0.0	0.5			3.5	1.5				7.0			3.5	7.5	2.5		3.5	7.0
6- 7				10.0	3.0	6.5		2.5	6.0	7.0	7.5			1.5		2.5	11.5	1.5	3.5	8.5	12.5	3.5	
7- 8		2.5			2.0	5.5	9.0												9.5	4.5		3.0	
8- 9		7.0			0.5	4.5	4.0	4.0	2.5				9.0		9.0				5.5	0.5		2.5	
9-10		11.5	7.5	3.5	7.5	3.5						5.0		3.5		1.5			2.0	7.0		2.5	
10-11				12.0	6.5	2.5		5.0			1.5		3.0			12.5			8.0	3.0		2.0	4.0
11-12			3.0		5.5	1.5	7.5				7.0						11.0		4.0	9.0	4.5	1.5	
12-13					4.0	0.5	2.0	6.0		2.0				5.5		0.0			10.0	5.0		1.0	
13-14		2.0		6.0	3.0	7.0				6.0					0.0	11.5		6.5	6.0	1.0	13.0	1.0	
14-15		6.5			2.0	6.0		7.0		9.5								4.0	2.0	7.0		0.5	
15-16		11.0			1.0	5.0	5.5				1.0		9.0	7.5				1.5	8.0	3.0		0.0	1.5
16-17					0.0	4.0	0.5	8.0			7.0	5.0			2.0	10.0	11.0		4.0	9.0			
17-18				8.0	6.5	3.0		0.0	7.5				3.0						0.0	5.0			
18-19			9.0		5.5	2.0	9.0	9.0						9.5					6.0	1.0	5.0		8.0
19-20		1.0			4.5	0.5	4.0	1.0	3.5	1.0					4.0	9.0			2.0	7.0			
20-21	1.5	6.0	4.5	2.0	3.5	7.5				4.5	0.5								8.5	3.5			
21-22		10.5		10.5	2.5	6.5		2.0		8.5	6.5						10.5		4.5	9.5			
22-23			0.0		1.5	5.5	7.0				12.0		9.0		6.0	7.5		6.5	0.5	5.5			
23-24					0.5	4.0	2.0	3.0				5.0		0.5				4.5	6.5	1.5			5.5
24-25				4.5	7.0	3.0							3.0					2.0	2.5	7.5			
25-26		0.5			6.0	2.0		4.0			0.0				8.5	6.5			8.5	3.5	5.5		
26-27		5.5			5.0	1.0	5.5				6.0			3.0			10.0		4.5	9.5			
27-28		10.0	10.5		4.0	0.0	0.0	5.0		3.5	12.0								0.5	5.5			
28-29				6.5	3.0	6.5			8.5	7.5						5.0			6.5	1.5			2.5
29-30			6.0		2.0	5.5	8.5	6.0					9.0	5.0					2.5	7.5			
30-31	0.5				1.0	4.5	3.5		4.5			5.0							8.5	3.5			

	DV CEP	EG CEP	SS CET	RZ COM	RZ COM	SS COM	SS COM	U CRB	RW CRB	W CRV	W CRV	RV CRV	RV CRV	V CRT	SW CYG	ZZ CYG	AE CYG	BR CYG	CG CYG	DK CYG	KV CYG	V346 CYG	V387 CYG
MAX	11.6	9.6	9.4	10.0	10.0	10.9	10.9	7.6	10.1	10.6	10.6	9.0	9.0	9.5	9.3	10.7	11.8	9.4	11.0	10.3	11.5	11.8	11.5
MIN	12.4	10.6	13.0	10.7	10.7	11.5	11.5	8.8	10.6	11.2	11.2	10.0	10.0	10.2	11.8	12.0	12.8	10.5	11.8	10.8	12.6	13.6	12.3
DUR	4	3	5	3	3	4	4	5	4	4	4	4	4	4	5	4	4	4	3	4	5	5	3
TOT			2												2								
					(S)		(S)				(S)		(S)										
0- 1	8.5	4.0																		1.5			
1- 2	12.5	6.0						12.5				12.0				3.5			2.5				
2- 3		8.0				7.5				9.0				10.0				2.5					
3- 4		10.5					8.5									0.5							3.5
4- 5		12.5				9.0						12.0		12.5								3.5	
5- 6	0.0	1.5																					1.5
6- 7	4.0	3.5							11.0							4.0		2.5	3.5	4.0			
7- 8	8.0	6.0			7.5							11.5		8.0						3.0			
8- 9	12.0	8.0			7.5			10.5								1.0			1.0	1.5			
9-10		10.0			8.0	8.0				8.5				10.5						0.0			
10-11		12.0					9.0					11.5						2.5					4.5
11-12		1.5				9.5										4.5			5.0		1.5		
12-13		3.5																					3.0
13-14	3.5	5.5	8.5									11.0				2.0	4.5		2.0				
14-15	7.5	7.5							11.0					8.5			4.0	2.5		4.5			1.0
15-16	11.0	10.0					8.0				9.0				3.0		3.0			3.0		3.0	
16-17		12.0	8.0			8.5						11.0		11.0			2.5			1.5			
17-18		1.0					9.5										1.5			0.0			
18-19		3.0		7.5												2.5	1.0	2.5	3.5				
19-20		5.5	7.5	7.5					13.0			10.5					0.0						4.0
20-21	2.5	7.5		8.0									13.0						1.0				
21-22	6.5	9.5												9.0									2.0
22-23	10.5	12.0	7.0				8.0		10.5		8.5	10.0						2.5		4.5			
23-24		1.0				9.0							12.5	11.5		3.5			4.5	3.0			0.0
24-25		3.0					10.0													1.5			
25-26		5.0	6.0									10.0				0.5			2.0	0.0			
26-27		7.5											12.5					2.5				2.5	5.0
27-28	2.0	9.5							12.5														
28-29	6.0	11.5	5.5		7.0	8.0				9.0		9.5		9.5		4.0					2.0		3.0
29-30	10.0	0.5			7.5		8.5						12.0										
30-31		3.0			8.0	9.5			10.5					12.0		1.0		2.5	3.0	4.5			1.5

	V388 CYG	V456 CYG	V466 CYG	V466 CYG	V477 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	TZ ERI	YY ERI	YY ERI	RW GEM	AF GEM
MAX	9.7	10.8	10.8	10.8	8.3	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	9.8	8.4	8.4	9.6	10.2
MIN	10.3	11.9	11.6	11.6	9.2	8.7	14.6	12.7	12.5	10.8	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
DUR	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	3	3	5	4
TOT								2							1				1			1	
				(S)		(S)											(S)				(S)		
0- 1	3.0										2.5		10.0	1.0		2.0			4.0	1.5	5.5	5.0	10.5
1- 2		3.0					2.5					0.5		3.0				1.5		0.5	4.5		
2- 3		0.5					6.0								1.0					7.5	3.5		
3- 4													3.0			8.0		11.0		6.5	3.0	1.5	
4- 5										3.0	1.5		11.5	10.5						6.0	2.0		4.0
5- 6						1.0	2.5							13.0					9.0	5.0	1.0		10.0
6- 7	3.5			1.5			6.0							2.0						4.0			
7- 8													4.5	4.5				1.0		3.5	7.0		
8- 9			3.5								1.0	1.5					5.5			2.5	6.5		
9-10		3.5			1.0		2.5	0.0						9.5				10.5		1.5	5.5		3.5
10-11		1.0					6.0		1.0	2.0				12.0	11.0					0.5	4.5		9.0
11-12													6.5	1.0			12.0			7.5	3.5		
12-13	3.5					2.0								3.5						6.5	3.0		
13-14	0.5			0.5			2.5								6.5	3.0		1.0	4.5	6.0	2.0		
14-15							5.5													5.0	1.0	12.5	3.0
15-16			2.5									3.0	8.0	11.0				10.5		4.0			8.5
16-17					1.5					1.0				0.0	1.5	9.0				3.5	7.0		
17-18		4.0					2.0							2.5						2.5	6.5	9.5	
18-19	4.0	1.5					5.5						1.5	5.0			0.5		9.5	1.5	5.5		
19-20	0.5					3.0						1.0	10.0					1.0		1.0	4.5		2.0
20-21														10.0						7.5	4.0	6.5	8.0
21-22							2.0							12.5			6.5	10.5		7.0	3.0		
22-23			1.5				5.5						3.0	1.5						6.0	2.0		
23-24					2.5						2.5		11.5	4.0						5.0	1.0	3.0	
24-25				3.5											12.0		13.0			4.0			1.5
25-26	1.0						2.0											0.5		3.5	7.0		7.5
26-27		2.0					5.5					2.0	5.0	11.5		4.0			5.5	2.5	6.5		
27-28											1.5			0.5	7.0			10.5		1.5	5.5		
28-29														3.0						1.0	4.5		
29-30			0.5				2.0			3.5						10.5				7.5	4.0		
30-31					3.5		5.0					0.0	6.5		2.5					7.0	3.0		6.5

	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	UV LEO	VZ LEO	T LMI	RR LEP	RY LYN
MAX	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	9.5	10.6	10.2	10.2	11.9
MIN	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	10.2	11.7	12.6	10.9	13.3
DUR	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	6	4	4
TOT		1																					
								(S)				(S)				(S)							
0- 1							7.5				3.0	6.5			7.5		8.5	12.0				5.0	2.0
1- 2						12.5	7.5				2.5	5.5				1.0				6.0	12.5	3.0	12.5
2- 3							7.0		9.5		1.5	5.0							9.5	8.5			
3- 4	0.0		12.5		13.0		7.0				0.5	4.0		1.0						10.5			
4- 5						6.0	7.0		6.0			3.0				3.5				12.5			9.5
5- 6							6.5		11.5		6.5	2.0					10.0	13.0	9.5				
6- 7						7.0	6.5			7.0	5.5	1.0		6.0									
7- 8							6.5		7.5	8.0	4.5	0.5	0.5			5.5		5.0					6.5
8- 9						8.5	6.0			9.0	3.5		2.5		0.5				9.5				
9-10							6.0			10.0	2.5	6.0	4.0									9.0	
10-11						9.5	5.5		9.5	11.5	2.0	5.5	6.0			7.5	11.5					7.0	3.0
11-12							5.5			12.5	1.0	4.5		1.5	2.5				9.5			5.0	
12-13	0.0				11.0	11.0	5.5		5.5			3.5					4.0	6.0				3.0	
13-14							5.0		11.0		7.0	2.5								6.0			
14-15						12.0	5.0				6.0	1.5		6.5	4.5				9.5	8.0			10.5
15-16							4.5		7.5		5.0	0.5					13.0			10.0			
16-17							4.5		13.0		4.0									12.5			
17-18						5.5	4.5				3.0	6.5			6.5		5.5	7.0	9.5				7.5
18-19									9.0	7.0	2.0	5.5				0.5							
19-20			0.5	12.0		7.0		8.0		8.0	1.5	5.0		2.0									
20-21								7.5	5.5	9.5	0.5	4.0			8.5				9.5			8.5	4.5
21-22	0.0					8.0		7.5	11.0	10.5		3.0				2.5						6.5	
22-23		12.5						7.5		11.5	6.5	2.0	1.5				6.5	8.0				4.5	
23-24						9.0		7.0	7.5	12.5	5.5	1.0	3.5						9.5			2.5	
24-25								7.0	13.0		4.5	0.0	5.0			4.5							11.5
25-26						10.5		6.5			3.5									5.5			
26-27								6.5	9.0		2.5	6.0							9.5	8.0			
27-28						11.5		6.5			2.0	5.0		2.5		6.5	8.0	9.0		10.0			8.5
28-29								6.0			1.0	4.5			1.5					12.0			
29-30						13.0		6.0	11.0			3.5							10.0				
30-31	0.0					5.0		5.5		7.5	6.5	2.5				8.5						10.0	5.5

	UZ LYR	EW LYR	FL LYR	RU MON	RU MON	RW MON	AT MON	BB MON	BO MON	V508 OPH	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
MAX	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	10.8	10.1	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
MIN	11.0	13.6	9.5	11.3	11.3	11.9	11.4	11.3	12.1	10.7	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
DUR	5	5	4	5	5	5	5	4	5	3	3	4	3	3	5	3	4	3	3	4	4	3	3
TOT						1			1														
					(S)									(S)					(S)		(S)		(S)
0- 1								7.5		0.5			10.0	5.0				5.5			6.5	3.5	
1- 2						7.0							6.5						5.5	11.0	5.0	6.5	2.0
2- 3								12.0					2.5	7.5		7.5		5.5		9.5	3.5	0.5	5.0
3- 4						5.0		6.0					9.0	4.0					5.5	8.0	2.5	3.5	
4- 5									5.0		0.5	7.0	5.5					5.5		6.5		6.5	2.0
5- 6						2.5		10.5					1.5	7.0		10.0			5.5	5.0	11.0	0.5	5.0
6- 7			3.5					4.0	10.5				8.0	3.0				5.5		3.5	9.5	3.5	
7- 8													4.5	9.5					5.5	2.5	8.0	6.5	2.0
8- 9								9.0						6.0			3.5	5.5			6.5	0.5	5.0
9-10													7.5	2.5	10.0				5.5	11.0	5.0	3.5	
10-11	1.0				7.0					0.5			3.5	8.5	8.5	2.0		5.5		9.5	3.5	6.5	2.0
11-12								7.0				6.5	10.0	5.0	7.5		7.5		5.5	8.0	2.5	0.5	5.0
12-13													6.5	1.5	6.5			5.5		6.5		3.5	
13-14								12.0			0.5		3.0	8.0	5.0	4.5			5.5	5.0	11.0	6.5	2.0
14-15								5.5					9.5	4.0	4.0		11.0	5.5		4.0	9.5	0.0	4.5
15-16		1.5					3.5		8.0				5.5		3.0				5.5	2.5	8.0	3.0	
16-17				6.5				10.5					2.0	7.0	1.5	6.5		5.5			6.5	6.0	1.5
17-18		0.5	1.0		11.0		4.5	4.0					8.5	3.5					5.5	11.0	5.0	0.0	4.5
18-19						11.0						6.0	4.5	10.0				5.5		9.5	4.0	3.0	
19-20							5.0	8.5						6.0		9.0			5.5	8.0	2.5	6.0	1.5
20-21						8.5				0.5			7.5	2.5				5.5		6.5		0.0	4.5
21-22							6.0						4.0	9.0					5.5	5.0	11.0	3.0	
22-23						6.5		7.0			0.5			5.5				5.5		4.0	9.5	6.0	1.5
23-24				10.5			6.5						6.5	1.5					5.5	2.5	8.0	0.0	4.5
24-25						4.0		11.5	6.0				3.0	8.0				5.5			6.5	3.0	
25-26							7.0	5.5				5.5	9.5	4.5					5.5	11.0	5.0	6.0	1.5
26-27						2.0			11.5				6.0					5.5		9.5	4.0	0.0	4.5
27-28	1.5						8.0	10.0					2.0	7.0		3.5	1.5		5.5	8.0	2.5	3.0	
28-29					5.0			3.5					8.5	3.5	10.5			5.5		6.5		6.0	1.5
29-30							8.5						5.0	10.0	9.0				5.5	5.0	11.0	0.0	4.5
30-31			2.5					8.5		0.0				6.5	8.0	5.5	5.0	5.5		4.0	9.5	3.0	

	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	UZ PUP	V505 SGR	AO SER	CC SER	CC SER	RW TAU	RZ TAU	TY TAU
MAX	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	9.7	6.4	10.6	11.1	11.1	8.0	10.5	11.5
MIN	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	10.3	7.6	12.1	11.7	11.7	12.5	11.2	12.0
DUR	6	12	3	3	3	2	4	6	4	8	5	4	8	7	4	4	5	4	4	4	4	3	2
TOT		4						2			1										1		
				(S)												(S)				(S)			
0- 1			0.5	5.0	1.5		6.0			5.5	7.0	2.5			9.5				10.5		6.0	0.0	1.0
1- 2			2.5		4.5		5.5					6.0			4.5				11.5			6.0	3.0
2- 3			4.5	0.5	0.5	1.0	5.0		10.0	5.0		9.5	7.5			9.0			12.0			2.0	4.5
3- 4				2.5	3.5		4.5		6.5							4.5					0.0	8.0	6.5
4- 5				4.5		4.5	4.0		2.5	4.5					9.0							4.0	8.5
5- 6			2.0		2.5		3.5						4.0									10.0	10.0
6- 7			4.0				2.5			3.5						8.5						6.0	
7- 8				1.5	2.0	0.5	2.0		12.0			0.0										1.5	
8- 9				4.0	4.5		1.5		8.5	3.0	5.5	4.0	1.0		8.5					10.5		7.5	
9-10			1.5		1.0	4.0	1.0		5.0			7.5						11.5		11.5		3.5	
10-11			3.5		4.0		0.5		1.5	2.5		11.0				8.0				12.0		9.5	
11-12				1.0	0.0									5.5	12.5						7.5	5.5	
12-13				3.0	3.0	0.5				2.0					7.5							1.5	
13-14			1.0						11.0							12.0						7.5	
14-15			3.0		2.0	3.5			7.5	1.0						7.5					2.0	3.5	1.0
15-16			5.0	0.5	5.0				3.5			1.5		0.0	12.0							9.5	3.0
16-17				2.5	1.0				0.0	0.5	4.0	5.5			7.0			12.0	10.5			5.0	5.0
17-18			0.5	4.5	4.0							9.0				11.5			11.0			1.0	6.5
18-19	0.5		2.5		0.5							12.5				6.5			12.0			7.0	8.5
19-20			4.5	0.0	3.0	3.0			9.5						11.5							3.0	10.5
20-21				2.0					6.0						6.5							9.0	
21-22	3.0			4.0	2.5				2.5							11.0						5.0	
22-23			2.0										9.0			6.0					9.5	1.0	
23-24			4.0		1.5							3.0			10.5							7.0	
24-25	5.0			1.5	4.5	3.0			12.0		3.0	6.5			6.0					10.5		3.0	
25-26				3.5	0.5				8.5			10.5	6.0			10.5	0.0			11.0	4.0	8.5	
26-27			1.0		3.5	6.0		1.0	4.5							5.5				12.0		4.5	
27-28		1.5	3.0						1.0						10.0							0.5	
28-29				1.0	2.5								2.5		5.0							6.5	1.0
29-30				3.0		2.5		2.5			10.0					10.0							2.5	3.0
30-31			0.5	5.0	1.5				10.5			1.0		1.5		5.0						8.5	5.0

	WY TAU	AC TAU	AM TAU	EQ TAU	EQ TAU	V TRI	X TRI	RV TRI	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	BH VIR
MAX	11.5	10.5	10.4	10.3	10.3	10.9	8.9	11.4	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	9.9
MIN	11.7	12.3	12.3	11.0	11.0	11.9	12.0	12.5	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	11.3
DUR	4	6	5	3	3	4	4	4	3	6	3	3	1	3	3	4	4	4	4	4	4	4	4
TOT					(S)				(S)			(S)									(S)		
0- 1	5.5		5.5	6.0	2.0	2.5	8.5	6.0	4.5		4.0	8.5	8.5	7.0	6.0		12.5				8.5		10.0
1- 2				6.5	2.5	6.5	7.5		4.5		5.5				11.5	0.0	1.0			9.0			
2- 3	7.5		6.5	7.5	3.0		7.0		4.5		7.0		8.0	8.5			2.5				9.5		
3- 4				8.0	4.0	0.5	6.5	6.0	4.5			4.5				7.5	3.5			9.5			
4- 5	9.0		7.5	0.0	4.5	5.0	5.5	0.5	4.5			6.0	7.0	10.0			4.5		11.5				12.0
5- 6	2.0			1.0	5.0	9.0	5.0		4.5			7.5		2.5	3.5		6.0						
6- 7	11.0		9.0	1.5	5.5		4.5	6.5	4.5		4.5		6.0	11.5	9.0		7.0		10.0				
7- 8	3.5			2.0	6.0	3.0	3.5	0.5	4.5		6.5			4.0			8.5						
8- 9	13.0		10.0	2.5	6.5	7.0	3.0		4.5		8.0			13.0			9.5		8.0				
9-10	5.5			3.0	7.0		2.5	7.0	4.5			5.0		5.5			10.5				7.5		
10-11			11.0	3.5	8.0	1.5	1.5	1.0	4.5			6.5				5.0	12.0			8.0			
11-12	7.5			4.5	0.0	5.5	1.0		4.5		4.0	8.0	9.0	7.0	6.0		0.5				8.5	13.0	
12-13		0.0	12.0	5.0	1.0		0.0	7.0	4.5		5.5				11.5	12.0	1.5			9.0			
13-14	9.5			5.5	1.5			1.5	4.5		7.0		8.0	8.5			3.0		11.5		9.5		11.5
14-15	2.0	1.0		6.0	2.0	3.5			4.5		8.5	4.0					4.0						
15-16	11.0			6.5	2.5	7.5		7.5	4.5			5.5	7.5	10.0			5.0		9.5				
16-17	4.0	2.0		7.0	3.0			1.5	4.5			7.5		2.5	3.5		6.5						
17-18				7.5	3.5	2.0			4.5		4.5		6.5	11.5	9.0	2.5	7.5		8.0			12.0	
18-19	5.5	3.5		0.0	4.0	6.0		8.0	4.5		6.0			4.0			9.0						
19-20				0.5	5.0			2.0	4.5		7.5		6.0	13.0		9.5	10.0						
20-21	7.5	4.5		1.5	5.5	0.0			5.0			5.0		5.5			11.0				7.5		
21-22	0.0			2.0	6.0	4.0		8.5	5.0	5.0		6.5					12.5			8.0			
22-23	9.5	5.5		2.5	6.5	8.0		2.5	5.0		3.5	8.0	9.5	7.0	6.0		1.0		11.5		8.5		11.5
23-24	2.0			3.0	7.0				5.0		5.0				11.5		2.0			9.0		11.0	
24-25	11.5	6.5		3.5	7.5	2.5		8.5	5.0	6.5	6.5		8.5	8.5			3.5		9.5		9.5		
25-26	4.0			4.0	0.0	6.5		2.5	5.0		8.0	4.0					4.5	10.5					
26-27		7.5		4.5	0.5				5.0			5.5	7.5	10.0		7.0	6.0		8.0				
27-28	6.0			5.5	1.0	0.5		9.0	5.0	8.0		7.0		2.5	3.5		7.0						
28-29		8.5		6.0	2.0	4.5		3.0	5.0		4.5		7.0	11.0	9.0		8.0						
29-30	8.0			6.5	2.5	8.5			5.0		6.0			3.5			9.5						
30-31	0.5	9.5		7.0	3.0			9.5	5.0	9.5	7.5		6.0	12.5			10.5			7.5			

	Z	AW	AX	AY	BE	BO	BS	BT	BU	CD
	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	7.4	10.8	11.0	11.0	9.9	10.4	11.0	11.8	10.6	11.5
MIN	9.2	11.9	12.5	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	6	5	5	4	5	4	3	3	3	4
TOT										
0- 1		3.0			1.5					
1- 2									2.5	
2- 3							2.5			
3- 4							1.0			
4- 5		3.5					0.0			
5- 6									2.0	
6- 7								0.0		0.5
7- 8								3.5		
8- 9										1.5
9-10				1.5					2.0	
10-11										3.0
11-12										
12-13							2.0			
13-14		0.5					1.0		1.5	
14-15					0.5					
15-16								3.0		
16-17										
17-18	2.0	1.0			3.0				1.0	
18-19										
19-20										0.0
20-21										
21-22		2.0		3.0		2.0			0.5	1.5
22-23							2.0		4.0	
23-24						0.5	1.0	3.0		2.5
24-25										
25-26		3.0							0.0	
26-27									3.5	
27-28										
28-29										
29-30		3.5	0.0							
30-31									3.0	