

The 2022 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.

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REFERENCE

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

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	RT	TW	UU	WZ	XZ	AB	AB	AD	BD	BX	DS	CX	CZ	OO	V346	SS	SS	WW	WW	AP	AP	AR	AR
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQL	AQL	ARI	ARI	AUR	AUR	AUR	AUR	AUR	AUR
MAX	9.3	8.8	11.2	11.6	10	9.3	9.3	11.1	11.3	8.6	10.8	10.7	10.3	9.2	9	10.1	10.1	5.7	5.7	10.9	10.9	6	6
MIN	10.2	11	14.1	12.6	13	10.2	10.2	11.6	11.7	9.5	11.4	12	11.2	10.1	10.4	11.1	11.1	6.4	6.4	11.4	11.4	6.7	6.7
DUR	3	11	8	4	3	3	3	4	3	4	4	3	3	3	4	3	3	5	5	4	4	5	5
TOT		2																					
							(S)							(S)		(S)		(S)		(S)		(S)	
0- 1		3.0		5.0			2.5			3.5						1.5	6.0		5.0	4.0	11.0		
1- 2					0.5		2.5									6.5	1.5	11.0		7.5	0.5		
2- 3	5.0		3.0	7.0			2.5					2.5	1.0			2.0	7.0			10.5	4.0		
3- 4							2.0		5.5	4.5						7.0	2.5			0.5	7.0		
4- 5	2.5	5.5					2.0		3.5							2.5				3.5	10.5		
5- 6			2.0	2.0	2.0		2.0	6.5	1.5	0.5							3.0		6.0	7.0	0.0		
6- 7							2.0	6.5		6.0						3.5				10.5	3.5		
7- 8	6.0			4.0			2.0	6.0							0.0		4.0				7.0		
8- 9			1.5				1.5	5.5		2.0			2.0			4.0				3.5	10.0		
9-10	3.5			6.0	4.0		1.5	5.5	5.5	7.0							4.5	1.0		6.5			
10-11							1.5	5.0	4.0							5.0			7.5	10.0	3.0		
11-12	0.5		1.0				1.5	4.5	2.0	3.0						0.5	5.0				6.5		
12-13				0.5			1.0	4.5	0.5	8.5	0.0				0.5	5.5	0.5			3.0	9.5		
13-14					5.5	5.0	1.0	4.0			0.5					1.0	6.0			6.0			
14-15	4.0		0.0	3.0		5.0	1.0	3.5		4.0	0.5					6.5	1.5	2.0		9.5	2.5		
15-16						5.0	1.0	3.5	6.0		1.0					2.0	6.5		8.5	13.0	6.0		
16-17	1.5			5.0		5.0	1.0	3.0	4.5	0.0	1.0					7.0	2.0			2.5	9.5		
17-18					7.5	4.5	0.5	2.5	2.5	5.5	1.5					2.5				6.0	12.5		
18-19				7.0		4.5	0.5	2.5	1.0		1.5						3.0			9.0	2.5		1.5
19-20	5.0					4.5	0.5	2.0		1.5	2.0					3.0		3.5		12.5	5.5		
20-21					0.5	4.5	0.5	1.5		6.5	2.0						3.5		9.5	2.0	9.0	3.0	
21-22	2.0			2.0		4.5	0.5	1.5			2.5	0.0	0.5			4.0				5.5	12.5		
22-23						4.0	0.0	1.0	5.0	2.5	2.5						4.5			9.0	2.0		4.5
23-24				4.0		4.0	0.0	0.5	3.0	8.0	3.0					4.5				12.0	5.5		
24-25	5.5				2.0	4.0		0.5	1.0		3.0					0.0	5.0	4.5		2.0	8.5	6.5	
25-26				6.0		4.0				4.0	3.5					5.5	0.5		11.0	5.0	12.0		
26-27	3.0					4.0					3.5	0.0				1.0	5.5			8.5	1.5		8.0
27-28						3.5					4.0		1.5			6.0	1.0			12.0	5.0		
28-29	0.0			0.5	4.0	3.5			5.0	5.0	4.0					1.5	6.5			1.5	8.5	9.5	
29-30	6.5					3.5			3.5		4.5					7.0	2.0	6.0		5.0	11.5		
30-31				3.0		3.5			1.5	1.0	4.5					2.5	7.0		12.0	8.0	1.5		

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	CL	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	R	RT	SX	TU	TZ	TZ	UU	XZ
	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA	CMA	CMA	CMA	CMA	CMA	CMA	CMI
MAX	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	9.7	9.8	9.8	10	9.7
MIN	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	10.7	10.5	10.5	12.5	10.2
DUR	4	3	3	3	3	3	3	3	3	3	6	3	5	5	5	4	5	4	4	4	4	5	3
TOT				(S)	(S)		(S)		(S)						(S)						(S)		
0- 1	4.0	7.0					7.5		7.0			7.0		5.5									3.5
1- 2	10.0	11.5		9.5								11.5			9.0			4.5				6.5	7.0
2- 3		1.5	2.5									2.0	3.5	12.5	3.5	4.0							11.0
3- 4		6.0			7.5							6.0	11.0	7.0		7.5	2.5						
4- 5		10.0		6.0	7.0		6.5					10.5		1.0	10.5						8.5		4.5
5- 6	3.5	0.5			6.0							1.0			4.5				3.0				8.5
6- 7	9.5	5.0	9.0									5.5	3.0	8.0					6.5	5.5			
7- 8		9.0		2.0			7.0			6.5		10.0	11.0	2.5	12.0								2.0
8- 9												0.0			6.0		6.5				4.5		6.0
9-10		3.5	5.5			7.5					5.5	4.5		9.5	0.5			7.5					9.5
10-11	3.0	8.0				7.0		7.5				9.0	2.5	4.0		3.0							
11-12	9.0			8.5		6.0			7.0					10.5		7.5	6.0						3.5
12-13		2.5	1.5									3.5		11.0	2.0	9.5	3.5					2.5	7.0
13-14		7.0										8.0		5.5									11.0
14-15		11.5		5.0								12.5	2.0		9.0			4.5	4.0			6.5	
15-16	2.5	1.5			7.5					7.0		3.0	10.0	12.5	3.0				7.0				4.5
16-17	8.5	6.0	8.0		7.0							7.5		6.5									8.5
17-18		10.5		1.0	6.0		7.0					12.0		1.0	10.0		8.0						
18-19		0.5										2.0	2.0		4.5								2.0
19-20		5.0	4.5								3.5	6.5	10.0	8.0		5.0							6.0
20-21	2.0	9.0					7.0					11.0		2.5	11.5	8.5							9.5
21-22	8.0			7.5		7.5						1.0			6.0		5.0						
22-23		4.0	0.5			7.0			6.5		11.0	5.5	1.5	9.5	0.0			7.0					3.5
23-24		8.0	11.0			6.0		7.5				10.0	9.5	3.5	13.0				4.5				7.0
24-25				4.0								0.5			7.0				7.5				11.0
25-26	1.5	2.5										5.0		11.0	1.5		2.0				8.0	2.0	
26-27	7.5	7.0	7.0						7.0			9.5	1.0	5.0									4.5
27-28		11.5		0.0	7.5								9.0		8.5	4.0		4.0			7.0	6.0	8.5
28-29		1.5		10.5	7.0							4.0		12.0	3.0	7.0							
29-30		6.0	3.5		6.0						1.5	8.5		6.5						4.0			2.0
30-31	1.0	10.5						7.0				13.0	1.0	1.0	10.0		6.5	10.0					6.0

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	AK	RZ	TV	AB	CW	CW	DZ	IR	IS	IV	MM	OR	PV	PV	V364	V364	V375	U	SU	WZ	WZ	XX	DK
	CMI	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP
MAX	10.1	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.2	11.3	11.4	10	10	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2
MIN	11.5	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	12.5	11.9	12.4	10.6	10.6	11.7	11.7	10.9	9.8	9.8	11.3	11.1	9.6	14.2
DUR	4	4	4	4	3	3	4	4	5	5	5	4	3	3	4	4	5	4	4	3	3	4	4
TOT																		2					
						(S)								(S)		(S)						(S)	
0- 1	2.0				2.0	5.5		3.5		6.5			1.5								1.0	6.0	
1- 2	5.0		5.0	8.0	1.0	4.5				6.5						5.5					7.0	2.0	
2- 3	8.5				7.5	3.5	6.0	4.5	12.0	6.5							1.0		4.0	3.0	8.0		12.5
3- 4	11.5	3.0	0.5		6.5	2.5	1.0			6.5	0.5	4.5					12.5		1.5	9.0	4.0	4.5	12.5
4- 5		8.0		1.5	5.5	1.5		5.5	8.0	6.5	4.5	10.0				7.5		9.5		5.0	10.0		12.0
5- 6	4.0	12.5		10.5	4.5	0.5				6.5	8.0		7.5		2.0					1.0	6.0	13.0	11.5
6- 7	7.5				3.5	7.0	4.5	6.5	4.5	6.5				5.5			11.0			7.0	2.0		11.5
7- 8	10.5				2.0	6.0				6.5			1.5							3.0	8.0		11.0
8- 9				4.0	1.0	5.0			0.5	6.0		4.0			4.0				11.5	9.0	4.0		10.5
9-10	3.5	2.5		13.0	0.0	4.0	7.5			6.0		10.0					10.0	9.0		5.0	0.0		10.5
10-11	6.5	7.0	6.5		7.0	3.0	2.5			6.0										1.0	6.0	5.0	10.0
11-12	9.5	12.0			5.5	2.0		1.0		6.0	3.0				6.0				4.5	7.5	2.5		
12-13			2.0	6.5	4.5	1.0				6.0	7.0		7.5			0.5	8.5		2.0	3.5	8.5		
13-14	2.5				3.5	7.5	6.0	2.0		6.0		3.5		5.5						9.5	4.5		
14-15	5.5				2.5	6.5	0.5			6.0		9.5	1.5					9.0		5.5	0.5		
15-16	8.5	2.0		0.0	1.5	5.5		3.0		6.0						2.5	7.5			1.5	6.5		
16-17		6.5		9.0	0.5	4.5				6.0										7.5	2.5		
17-18	1.5	11.5			7.0	3.5	4.0	4.0	5.5	6.0									11.5	3.5	8.5	5.5	
18-19	4.5				6.0	2.0				6.0	2.0	3.0				5.0	6.0			9.5	4.5		7.5
19-20	7.5		8.0	2.5	5.0	1.0		5.0	1.5	6.0	5.5	9.0	7.5					8.5		5.5	0.5		7.0
20-21	11.0			11.5	4.0	0.0	7.5			6.0				5.5					4.5	1.5	6.5		6.5
21-22		1.5	3.5		3.0	7.0	2.0	6.0		5.5			1.5				7.0	4.5	2.0	7.5	2.5		6.5
22-23	3.5	6.0			2.0	5.5				5.5					1.5					4.0	9.0		6.0
23-24	7.0	11.0		5.0	1.0	4.5				5.5		2.5								10.0	5.0		5.5
24-25	10.0				7.5	3.5	5.5			5.5		8.5					3.5	8.0		6.0	1.0	5.5	5.0
25-26					6.5	2.5	0.5			5.5	0.5				3.5					2.0	7.0		5.0
26-27	2.5				5.5	1.5		0.5		5.5	4.5		8.0						12.0	8.0	3.0		4.5
27-28	6.0	1.0		7.5	4.5	0.5				5.5	8.5			5.5						4.0	9.0		4.0
28-29	9.0	5.5			3.5	7.0	3.5	1.5	6.5	5.5		2.5	2.0		5.5					0.0	5.0		4.0
29-30		10.0			2.5	6.0				5.5		8.0						8.0	5.0	6.0	1.0		3.5
30-31	2.0		5.0	1.0	1.0	5.0		2.5	3.0	5.5							1.0		2.5	2.0	7.0		3.0

	DL	DV	EG	SS	RW	RW	RZ	RZ	SS	SS	CC	CC	U	RW	W	W	RV	RV	V	SW	WW	ZZ	AE
	CEP	CEP	CEP	CET	COM	COM	COM	COM	COM	COM	COM	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG
MAX	12.4	11.6	9.6	9.4	11	11	10	10	10.9	10.9	11	11	7.6	10.1	10.6	10.6	9	9	9.5	9.3	9.9	10.7	11.8
MIN	13.2	12.4	10.6	13	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	10	10.2	11.8	13.2	12	12.8
DUR	5	4	3	5	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	5	5	4	4
TOT				2																2			
						(S)		(S)		(S)		(S)				(S)		(S)					
0- 1			2.5					6.0		8.5					6.5		9.5	6.5			13.0	0.5	
1- 2			4.5	0.0				6.5	9.0														
2- 3	5.5		6.5			5.0		6.5		10.0			13.0						9.0				
3- 4			9.0					7.0		5.5				11.0	9.0			9.5			1.0		
4- 5		2.0	11.0		5.5			7.5	6.5							8.5	13.0		11.5				
5- 6	12.0	6.0						8.0		7.5					8.0								
6- 7		9.5	2.0						8.0					8.5		7.0		9.0					
7- 8	3.0		4.5						9.0								12.5		7.0				
8- 9			6.5						9.5					13.0								2.0	
9-10			8.5		5.0		5.5						10.5					8.5	9.5				
10-11			10.5				5.5			6.0					9.0		12.5						
11-12		1.0	13.0			5.5	6.0		7.0		5.5			10.5		8.0			12.0				
12-13	0.5	5.0	2.0					6.5		7.5		5.0			7.5			8.5				11.5	
13-14		9.0	4.0					6.5		8.5		5.0				6.5	12.0					2.5	
14-15		13.0	6.0					7.0		9.0		5.0		8.5					7.5		1.5		
15-16	6.5		8.5					7.5			4.5							8.0					
16-17			10.5		5.0	8.0		6.0					8.5	12.5		9.0	11.5		10.0				
17-18			12.5							6.5					8.5							12.0	
18-19	13.0	0.5	1.5		5.5				7.5							8.0		8.0	12.5			3.0	
19-20		4.5	4.0							8.0				10.5	7.0		11.5						
20-21	4.0	8.5	6.0					5.5	9.0													0.5	
21-22		12.0	8.0					5.5		9.5								7.5	8.0	13.0			
22-23			10.5					6.0		5.5				8.0			11.0					13.0	
23-24			12.5		5.0			6.5	6.0							9.0			10.5				
24-25			1.5					7.0		7.0				12.5	8.0						0.5		
25-26	1.5		3.5			5.5		7.0	8.0							7.5	11.0		13.0			1.0	
26-27		3.5	5.5					7.5		8.5					6.5					2.5			
27-28		7.5	8.0					8.0	9.5			5.5		10.0									
28-29		11.5	10.0		4.5						5.0						10.5		8.5				
29-30			12.0							6.0		5.0			9.0			13.0					2.5
30-31			1.0			5.0				6.5		5.0		8.0		8.5			11.0			2.0	1.5

	BR	CG	DK	KV	V387	V388	V456	V466	V466	V477	V477	V704	TY	YY	FZ	Z	RZ	TW	UZ	UZ	AI	TZ	YY
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DRA	DRA	DRA	DRA	DRA	DRA	ERI	ERI
MAX	9.4	11	10.3	11.5	11.5	9.7	10.8	10.8	10.8	8.3	8.3	13.8	9.6	11	10.2	10.8	10	7.8	9.9	9.9	7.2	9.8	8.4
MIN	10.5	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	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12.6	9.1
DUR	4	3	4	5	3	3	3	4	4	4	4	4	4	4	3	4	3	5	5	5	4	4	3
TOT																		1				1	
									(S)		(S)										(S)		
0- 1												1.0	0.5				2.5			8.0		7.0	3.5
1- 2					3.0																		2.5
2- 3		2.0														3.5	7.5						2.0
3- 4					1.0		12.0						1.0			12.0	10.0						1.0
4- 5												1.0					12.5						0.0
5- 6			2.0														1.5		5.0		11.0		7.0
6- 7			1.0												0.5	5.0							6.0
7- 8						0.5	1.5											9.5					5.5
8- 9									1.0		0.5	0.5					9.0		11.5			2.5	4.5
9-10		0.5										4.0											3.5
10-11					2.0											7.0	0.5	5.0		2.5			2.5
11-12							12.5	12.5									3.0				11.0		2.0
12-13				12.5	0.0					0.5		0.5											1.0
13-14			2.0			0.5						4.0				0.0	8.0	0.5		9.0		7.5	0.0
14-15		2.0	1.0													8.5	10.5						7.0
15-16							2.0		0.0		1.5						13.0		0.0				6.0
16-17												0.5					2.0						5.5
17-18					3.0							4.0				2.0					10.5		4.5
18-19																10.5			6.5				3.5
19-20					1.5	1.0	13.0				1.5							9.5					3.0
20-21	13.0											0.5					12.0						2.0
21-22		0.5	2.5	0.5								3.5				3.5	1.0	10.5	12.5		3.5	1.0	
22-23			1.0													12.0							0.0
23-24					13.0		2.5													3.5	10.5		7.0
24-25	13.0							1.0				0.0			1.0		8.5	6.0					6.0
25-26						1.0						3.5	0.5			5.0	11.0						5.5
26-27		1.5			2.5									1.0			0.0			10.0			4.5
27-28										12.5							2.5	1.0					3.5
28-29	13.0				0.5							0.0							1.0				3.0
29-30			2.5									3.5				7.0	7.5				10.5		2.0
30-31			1.0														10.0						1.0

	YY	RW	AF	SZ	TU	UX	CC	CT	AV	DF	DF	DI	DK	SW	SW	VX	CM	CO	CO	Y	UU	UV	VZ	
	ERI	GEM	GEM	HER	HER	HER	HER	HER	HYA	HYA	HYA	HYA	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	
MAX	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11	11	11	10.5	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4	9.5	10.6	
MIN	9.1	11.6	11.3	12	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12	11	10	10	12.3	9.5	11	11	12.7	12.7	10.2	11.7	
DUR	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	
TOT		1			1																			
	(S)									(S)				(S)				(S)						
0- 1	7.5			12.0				13.0	12.5	5.5	10.5			5.0	1.0		4.5							
1- 2	6.5		3.0				13.0		5.0	5.5		5.0	4.0	0.0	1.5							6.0		
2- 3	5.5		8.5			12.0				5.0	6.5	6.0	3.0		3.5		4.5		6.0			11.0		
3- 4	5.0								6.5	5.0	12.0	7.0	2.0											
4- 5	4.0									4.5		8.5	1.0								7.0	6.0	4.0	
5- 6	3.0	9.0		10.0					7.5	4.5	8.5	9.5	0.0	4.0		0.0	6.5					11.0	6.0	
6- 7	2.5		2.5							4.5		10.5		3.0				0.5					8.5	
7- 8	1.5		8.0						8.5	4.0	4.5	11.5		2.5					7.5			6.5	10.5	
8- 9	0.5	5.5					11.5			8.0	4.0	10.0		1.5								11.0	12.5	
9-10	7.5			12.0				11.0	10.0	7.5	4.0			4.5	0.5			2.5			8.0			
10-11	6.5									7.5	3.5	6.5		3.5									6.5	
11-12	5.5	2.5	1.5						11.0	7.5	3.5	12.0		2.5									11.0	
12-13	5.0		7.5							3.5	7.0	3.0		1.5				4.5	9.0					
13-14	4.0								12.5	7.0	3.0	8.0	5.0	0.5	4.5		0.5						6.5	
14-15	3.0			10.0					4.5	7.0	3.0		6.0		3.5			12.5			9.0	11.0		
15-16	2.5						10.0			6.5	2.5	4.5	7.5		2.5	1.0		6.5						
16-17	1.5		1.0		10.5				6.0	6.5	2.5	10.0	8.5		2.0	2.5		1.5				6.5	4.0	
17-18	0.5		7.0							6.0	2.0		9.5	4.5	1.0	4.5				10.5		11.0	6.0	
18-19	7.5			12.0				9.5	7.0	6.0		6.0	10.5	4.0									8.0	
19-20	6.5					13.0				6.0		11.5	11.5	3.0				4.0		3.0	10.0	6.5	10.0	
20-21	6.0								8.5	5.5				2.0								11.0	12.5	
21-22	5.0		0.5							5.5		8.0		1.0			1.0							
22-23	4.0		6.0						9.5	5.0				0.0	4.0			6.0		12.0			6.5	
23-24	3.0			10.0						5.0		4.0			3.0								11.0	
24-25	2.5								11.0	5.0		9.5			2.0				13.0	4.0	10.5			
25-26	1.5	10.5			12.0				3.0	4.5			5.5		1.5								6.5	
26-27	0.5								12.0	4.5		6.0	6.5	4.0	0.5			2.0			3.0	11.0		
27-28			5.5	12.0					4.5	4.0		11.5	7.5	3.5										
28-29	6.5	7.0	11.5							4.0			8.5	2.5									6.5	3.5
29-30	6.0								5.5	4.0	8.0	7.5	9.5	1.5		0.0	2.0		4.0	5.5	11.5	11.0	5.5	
30-31	5.0									3.5	7.5		10.5	0.5	4.5	2.0							8.0	

	T	Z	RR	SS	DELT	RY	UZ	EW	FL	RU	RU	RW	BB	BO	U	SX	1010	EQ	ER	ER	ET	FL	FT
	LMI	LEP	LEP	LIB	LIB	LYN	LYR	LYR	LYR	MON	MON	MON	MON	MON	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI
MAX	10.2	11	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	6.2	10.3	9.5	9.5	11.2	10.5	9.1
MIN	12.6	12.5	10.9	11.3	5.9	13.3	11	13.6	9.5	11.3	11.3	11.9	11.3	12.1	6.5	11.2	7	13.3	10.2	10.2	12.4	13.2	9.7
DUR	6	4	4	6	7	4	5	5	4	5	5	5	4	5	5	5	4	4	3	3	5	3	4
TOT												1		1									
											(S)									(S)			
0- 1		5.5				3.5			1.0	6.0									7.0	2.0		6.5	
1- 2	3.0	5.0									10.0						11.5	3.5	3.5	8.5			
2- 3		5.0											4.0	2.0						5.0	8.0		
3- 4		5.0	8.0			0.0													6.5	1.0	7.0		
4- 5	3.5	4.5	6.0		10.5	10.5							8.5	7.5		10.5			2.5	7.5	6.0		
5- 6		4.5	4.0				12.5						2.5							4.0	4.5		
6- 7		4.5	2.0													12.0			5.5	0.5	3.5		
7- 8	4.0	4.0				7.5			10.0				7.0		11.5				1.5	7.0	2.5		
8- 9		4.0																3.5	8.0	3.0	1.0	0.5	
9-10		4.0										9.5							4.5				2.5
10-11	4.5	4.0		11.5		4.5							5.5						1.0	6.0			
11-12		3.5			10.0							7.0							7.5	2.5		3.0	
12-13		3.5									4.5		10.0		12.0				3.5				6.0
13-14	5.0	3.5				1.5						5.0	3.5	5.0					0.0	5.0			
14-15		3.0	7.5			11.5													6.5	1.5		5.5	
15-16		3.0	5.5									2.5	8.5	10.5			3.0	3.0	8.0				10.0
16-17	5.5	3.0	3.5										2.0							4.0			
17-18		2.5	1.5			8.5		11.0				0.5			13.0				5.5	0.5		8.0	
18-19		2.5			9.5				4.0				7.0						2.0	7.0			
19-20	6.0	2.5									8.5								8.5	3.5			
20-21		2.5				5.5		12.5											5.0				
21-22		2.0											5.0						1.0	6.0	8.5		
22-23	6.5	2.0												2.5			2.5	7.5	2.5	7.5			
23-24		2.0				2.5							10.0						4.0		6.5		
24-25		1.5				13.0		10.0					3.5	8.0					0.0	5.5	5.0		
25-26	7.0	1.5	7.5							8.0									6.5	1.5	4.0	2.0	
26-27		1.5	5.5										8.5						3.0	8.0	3.0		
27-28		1.0	3.5			9.5							2.0					8.5		4.5	1.5		
28-29	7.5	1.0	1.5									11.0							6.0	1.0	0.5	4.5	0.0
29-30		1.0											6.5					2.0	2.0	7.0			
30-31		1.0				6.5			12.5		2.5	8.5								3.5			

	FZ	FZ	GU	GU	U	U	TY	BB	BB	BX	DI	GP	Z	RT	ST	XZ	BETA	Y	UZ	UZ	U	AO	CC
	ORI	ORI	ORI	ORI	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PER	PER	PER	PER	PER	PSC	PUP	PUP	SGE	SER	SER
MAX	10.7	10.7	12.6	12.6	9.7	9.7	10.5	10.6	10.6	10.9	9.6	10.2	9.9	10.6	9.7	10.6	2.2	9	9.7	9.7	6.4	10.6	11.1
MIN	11.3	11.3	13.5	13.5	10.5	10.5	12.6	11.2	11.2	11.5	10.8	11	12.4	12	13.2	12.7	3.5	12	10.6	10.3	9.1	12.1	11.7
DUR	3	3	4	4	3	3	6	3	3	3	2	4	6	4	5	4	8	7	4	4	6	4	4
TOT													2		1						2		
		(S)		(S)		(S)			(S)											(S)			
0- 1	5.5	0.5	8.5	2.5		2.5			1.5	0.5						6.0			5.5			9.5	
1- 2	0.5	5.5	7.0	1.5	1.0						2.5			9.0		10.0				10.0			
2- 3	5.5	0.5	5.5		4.0			1.0						5.5						5.0			
3- 4	0.5	5.5	4.0	10.0		2.5		3.0		2.5				2.0				2.5	10.0				
4- 5	5.5	0.5	2.5	8.5	1.0				0.5						4.0				5.0			9.0	
5- 6	0.5	5.5	1.5	7.0	3.5				3.0	1.5												9.5	
6- 7	5.5	0.5		5.5		2.0		0.5			2.0					0.5						4.5	
7- 8	0.5	5.5	10.0	4.0	0.5			2.5		0.5		4.5		8.0		4.0			9.0		10.0	11.0	
8- 9	5.5	0.5	8.5	2.5	3.5				0.0			4.0		4.0		7.5			4.5			12.0	
9-10	0.5	5.5	7.0	1.5		2.0			2.0			3.5		0.5								9.0	
10-11	5.5	0.5	5.5		0.5					3.0		3.0									4.0	12.5	
11-12	0.5	5.5	4.0	10.0	3.5			2.0			2.0	2.0								8.5			
12-13	5.5	0.5	2.5	8.5		2.0				2.0		1.5	1.5	10.0	3.0					3.5			
13-14	0.5	5.5	1.5	7.0	0.5				1.5			1.0		6.5							8.5		
14-15	5.5	0.5		5.5	3.5					1.0		0.5		3.0		2.0					3.5	11.0	
15-16	0.5	5.5	10.0	4.0		2.0		1.5					2.5			5.5			8.0				
16-17	5.5	0.5	8.5	2.5	0.5					0.0	1.5					9.0	8.0		3.0				
17-18	0.5	5.5	7.0	1.5	3.5				1.0													7.5	
18-19	5.5	0.5	5.5			2.0			3.0				4.0	9.0								2.5	
19-20	0.5	5.5	4.0	10.0	0.5			1.0		2.0				5.0			5.0			7.5			
20-21	5.5	0.5	3.0	8.5	3.5			3.0						1.5	1.5					2.5		9.0	
21-22	0.5	5.5	1.5	7.0		2.0			0.5	1.0	1.0		5.5								7.0	12.0	
22-23	5.5	0.5		5.5	0.5				2.5							3.5	1.5				2.0	9.0	
23-24	0.5	5.5	10.0	4.0	3.5			0.0		0.5	4.0					7.0			7.0			11.0	
24-25	5.5	0.5	8.5	3.0		2.0		2.5					6.5	7.5		10.5						12.0	
25-26	0.5	5.5	7.0	1.5	0.5									4.0	8.5							6.5	
26-27	5.5	0.5	5.5		3.5				2.0	2.5	0.5			0.5									
27-28	0.5	5.5	4.0	10.0		2.0	2.0						8.0							6.0			
28-29	5.5	0.5	3.0	8.5	0.5			1.5		1.5	4.0				0.5						10.5	12.5	
29-30	0.5	5.5	1.5	7.0	3.5									10.0		1.0					6.0	10.0	
30-31	5.5	0.5		5.5		2.0			1.5	0.5				6.0		5.0				10.5			

	CC	RW	RZ	TY	WY	AC	AM	EQ	EQ	V	X	RV	W	W	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	
	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR
MAX	11.1	8	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	
MIN	11.7	12.5	11.2	12	11.7	12.3	12.3	11	11	11.9	12	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11	11.7	11.2	11.4	13.5	
DUR	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	
TOT		1																						
	(S)								(S)					(S)			(S)							
0- 1	12.0	4.5	3.5			4.0		5.0	1.0	7.0			1.0	5.0		5.0		5.0	6.5	11.5	7.5			
1- 2			9.5		4.5			5.5	1.5				1.0	5.0		6.5	2.5	6.0		12.0		8.5		
2- 3			5.5			5.0		6.0	2.0	1.0		4.0	1.0	5.0		8.0	4.0		6.5			10.0	9.5	
3- 4			1.5		6.0			6.5	2.5	5.0			1.0	5.0			5.5	5.0					11.0	
4- 5			7.5			6.0		7.5	3.0				1.0	5.0		2.5	7.0	9.5	8.0				12.5	
5- 6			3.5		8.0			8.0	4.0			4.5	1.0	5.0		4.0	8.5	4.0	0.5	4.0	2.0	1.0		
6- 7			9.0		0.5	7.0		0.5	4.5	3.5			1.0	5.0		5.5		8.5	9.5	9.5		2.0	10.0	
7- 8			5.0		10.0			1.0	5.0				1.0	5.0		7.0	3.0		2.0		9.0	3.5		
8- 9			1.0	1.0	2.5	8.0		1.5	5.5			5.0	1.0	5.0	3.0		4.5	7.5	11.0				4.5	
9-10			7.0	3.0				2.0	6.0	1.5			1.0	5.0		2.0	6.0		3.5				5.5	
10-11			3.0	5.0	4.5			2.5	6.5	5.5			1.0	5.0		3.5	7.5	7.0	12.5	1.5		7.0	10.5	
11-12		6.0	9.0	7.0				3.0	7.0			5.0	1.0	5.0	4.5	5.0			5.0	6.5			8.0	
12-13	9.0		5.0	8.5	6.5			3.5	8.0				1.0	5.0		6.5	2.0	6.0		12.0			9.5	
13-14	9.5		1.0			0.5	4.5	0.0	4.0				1.0	5.0		8.0	3.5		6.5				10.5	
14-15	10.5	0.5	6.5		8.0			5.0	1.0			5.5	1.0	5.0	6.0		5.0	5.5			6.5	11.5		
15-16	11.0		2.5		1.0	1.5	5.5	1.5		7.5			1.0	5.0		2.5	6.5		8.0				0.5	
16-17	12.0		8.5		10.0			6.0	2.0	2.0	6.5		1.0	5.0		4.0	8.0	4.5	0.5	4.0			1.5	
17-18			4.5		2.5	2.5	6.5	2.5	6.0	6.0	6.0	1.0	5.0	7.5	5.5		9.0	9.5	9.5				2.5	
18-19			0.5					7.0	3.0		5.5	0.0	1.0	5.0		7.0	3.0	4.0	2.0				4.0	
19-20			6.5		4.5	3.5	8.0	3.5	0.5	4.5			1.0	5.0			4.5	8.0	11.0				5.0	8.5
20-21			2.5					0.0	4.0	4.5	4.0	6.5	1.0	5.0	9.0		6.0		3.5				6.5	
21-22			8.5		6.5	4.5	0.5	5.0		3.5	0.5	1.0	5.0		3.0	7.5	7.5	12.5	1.5	4.0		7.5		
22-23		8.0	4.5	1.5				1.5	5.5		2.5		1.5	5.5		4.5			5.0	7.0			8.5	
23-24			0.0	3.0	8.5	5.5	2.0	6.0	2.5	2.0	6.5	1.5	5.5	10.5	6.0	2.0	6.5			12.0	11.5	10.0	9.0	
24-25			6.0	5.0	1.0			2.5	6.5	7.0	1.0	0.5	1.5	5.5		7.5	3.5		6.5				11.0	
25-26		2.5	2.0	7.0	10.0	6.5	3.0	7.0		0.5			1.5	5.5			5.0	5.5					12.0	
26-27			8.0	8.5	3.0			3.5	7.5	1.0		7.0	1.5	5.5	12.0	2.0	6.5		8.0				1.0	
27-28			4.0			8.0	4.0	0.0	5.0			1.0	1.5	5.5		4.0	8.0	5.0	0.5	4.0			2.0	9.5
28-29	8.5				4.5			5.0	0.5				1.5	5.5		5.5		9.0	9.5	9.5	1.5	3.0		
29-30	9.5		6.0			9.0	5.5	1.0				7.5	1.5	5.5		7.0	2.5	4.0	2.0				4.5	
30-31	10.5		2.0		6.5			6.0	2.0	3.0		1.5	1.5	5.5		8.5	4.0	8.5	11.0		9.0	5.5		

AAVSO Eclipsing Binary Ephemeris for February 2022

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	RT	TW	UU	WZ	XZ	AB	AD	AD	BD	BX	DS	CX	CZ	XZ	OO	V343	V346	SS	SS	WW	WW	AP	AP
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQL	AQL	AQL	AQL	ARI	ARI	AUR	AUR	AUR	AUR
MAX	9.3	8.8	11.2	11.6	10	9.3	11.1	11.1	11.3	8.6	10.8	10.7	10.3	9.3	9.2	10.6	9	10.1	10.1	5.7	5.7	10.9	10.9
MIN	10.2	11	14.1	12.6	13	10.2	11.6	11.6	11.7	9.5	11.4	12	11.2	11.2	10.1	12.3	10.4	11.1	11.1	6.4	6.4	11.4	11.4
DUR	3	11	8	4	3	3	4	4	3	4	4	3	3	7	3	4	4	3	3	5	5	4	4
TOT		2																					
							(S)								(S)			(S)		(S)		(S)	
0- 1	3.5									6.0	5.0	0.0								2.5			4.5
1- 2				5.0	5.5	3.0					5.0							3.0				1.0	8.0
2- 3	1.0	2.5				3.0				2.0	5.5								3.5		0.5	4.5	
3- 4						3.0					5.5							3.5		7.0		8.0	1.0
4- 5						3.0			4.0		6.0								4.0			11.0	4.5
5- 6	4.5					2.5			2.0	3.5		0.5						4.5				1.0	7.5
6- 7				2.0		2.5			0.5										5.0			4.0	11.0
7- 8	1.5					2.5										12.0		5.0	0.5		2.0	7.5	0.5
8- 9				4.0	0.5	2.5				4.5								0.5		8.0		11.0	4.0
9-10						2.5							0.0						1.0			0.5	7.5
10-11						2.0			4.5	0.5					11.0			1.5				4.0	10.5
11-12	11.5					2.0			2.5	6.0					11.5				1.5			7.0	0.5
12-13	2.5				2.5	2.0			0.5						12.0				2.0		3.0	10.5	3.5
13-14				0.5		2.0				1.5									2.5	9.5		0.0	7.0
14-15						2.0													3.0			3.5	10.5
15-16				3.0		1.5													3.0			7.0	0.0
16-17	12.0				4.0	1.5	4.5			3.0									3.5			10.0	3.5
17-18	3.0			5.0		1.5	4.0	3.0									12.5		4.0		4.5		6.5
18-19						1.5	4.0	1.0											4.0			3.0	10.0
19-20	0.5					1.5	3.5			4.0				13.0					4.5			6.5	
20-21			4.0		6.0	1.0	3.0												5.0	0.0		10.0	3.0
21-22	13.0					1.0	3.0			0.0									0.5				6.5
22-23	4.0			2.0		1.0	2.5			5.5									1.0		5.5	3.0	9.5
23-24			3.5			1.0	2.0	3.5											1.0			6.0	
24-25	1.0			4.0		1.0	2.0	1.5	1.5										1.5			9.5	2.5
25-26						0.5	1.5												2.0				6.0
26-27			2.5			0.5	1.0												2.0	0.5		2.5	9.5
27-28	4.5				0.5	0.5	12.5	1.0		2.5							11.5	2.5			6.5	6.0	

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	AR	AR	CL	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	ZZ	Y	SV	AL	CD	CD	R	RT	SX	TU	TZ
	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA	CMA	CMA	CMA	CMA
MAX	6	6	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			7.0	0.5		6.5	5.0			5.5	4.5				3.0	8.5		4.5				2.0	
1- 2				5.0			4.0					5.5		9.0	7.5		8.0				1.0	5.0	
2- 3				9.5				7.5	7.0		6.5		4.5		12.0		2.0	11.5					
3- 4						3.0		7.0	6.0						2.5	0.5		5.5		3.5			
4- 5			0.5	4.0				6.0	5.0			5.0			7.0	8.5	9.0	0.0	2.5		7.0		
5- 6			6.5	8.0	6.0			5.5		7.5	6.0				11.5		3.5	12.5	6.0				
6- 7								5.0		6.5		7.0			1.5			7.0					
7- 8				2.5				4.0		5.0			4.5		6.0	0.0	10.5	1.5		0.5			
8- 9				7.0	2.5		7.5				5.0				10.5	8.0	5.0						
9-10							7.0		6.5			6.0			0.5			8.5			4.0	2.5	
10-11			5.5	1.5		5.5	6.0		5.5		7.0				5.0		12.0	2.5				5.5	
11-12				6.0			5.5				4.5		7.0	9.5			6.0						
12-13					9.0		5.0			7.0		5.5				7.5	0.5	10.0	1.5	5.0			
13-14				0.5		2.0	4.0			6.0	6.5				4.5			4.0	5.0				
14-15				5.0				7.5							9.0		7.5		8.0		1.0		
15-16			5.0	9.5	5.0			7.0	7.5			5.0					2.0	11.0					
16-17		0.0						6.0	6.0		5.5				3.5	7.0		5.5		2.0			
17-18				4.0		8.5		5.5	5.0			6.5			8.0		9.0				7.0	6.5	
18-19	1.5			8.0	1.5			5.0		7.5					12.5		3.5	12.5				3.0	
19-20								4.0		6.5	5.0				2.5			7.0				6.0	
20-21		3.5	4.5	3.0		4.5	7.5			5.0		6.0			7.0	7.0	10.5	1.0	0.5				
21-22				7.0			6.5				7.0			5.0	11.5		4.5		3.5	6.0			2.5
22-23	5.0				8.0		6.0		6.5						2.0			8.0	7.0		4.0		
23-24				1.5		1.0	5.5		5.5			5.5			6.5		11.5	2.5					
24-25		6.5		6.0			5.0				6.5			12.5	11.0	6.5	6.0						
25-26			4.0		4.5		4.0				7.0				1.0		0.5	9.5		3.5			
26-27	8.0			0.5				7.5		6.0		4.5			5.5			4.0				0.5	
27-28				5.0		7.5		6.5		4.5	5.5				10.0		7.5				1.0	3.5	

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

	WZ	XX	DK	DL	DV	EG	RW	RW	RZ	RZ	SS	SS	CC	CC	U	RW	W	W	RV	RV	V	Y	SW
	CEP	CEP	CEP	CEP	CEP	CEP	COM	COM	COM	COM	COM	COM	COM	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT	CYG	CYG
MAX	11.7	8.5	12.2	12.4	11.6	9.6	11	11	10	10	10.9	10.9	11	11	7.6	10.1	10.6	10.6	9	9	9.5	7	9.3
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	10	10.2	7.6	11.8
DUR	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6	5
TOT	(S)						(S)		(S)		(S)		(S)				(S)		(S)				2
0- 1	3.0	6.0	3.0			3.5		4.0	5.5			7.5		4.5			8.0		10.5			10.5	
1- 2	9.0		2.5			5.5	5.5	2.5	5.5		8.0		4.5			12.5		7.0		12.5			
2- 3	5.5		2.0	5.0	3.0	7.5	4.5		6.0		4.0	9.0		4.5		5.5	6.5			6.5	6.0		
3- 4	1.5		2.0		7.0	10.0	3.0		6.5		9.5	5.0	4.0					5.5	10.0			10.5	
4- 5	7.5		1.5		11.0	12.0		5.0	7.0		5.5			4.0		10.0	5.0			12.5	9.0		
5- 6	3.5		1.0	11.5		1.0		3.5	7.0	3.0		6.5	4.0				9.0			6.5			
6- 7	9.5		1.0			3.0	5.0		7.5	3.5	7.0			3.5				8.0	10.0		11.5	10.5	
7- 8	5.5	6.0	0.5	2.5		5.5	4.0		8.0	4.0		8.0	3.5		7.5	7.5				12.0	4.0		
8- 9	1.5		0.0			7.5	3.0	5.5		4.0	8.5	3.5		3.5				6.5		6.0			
9-10	7.5				2.5	9.5		4.5		4.5	4.5	9.5	3.0		12.5	12.0	6.0		9.5		6.5	10.0	
10-11	3.5			8.5	6.5	11.5		3.0		5.0		5.0		3.0				5.5		12.0			
11-12	9.5				10.0	1.0	5.0			5.5	6.0		3.0				4.5	9.5		6.0	9.5		
12-13	5.5					3.0	3.5			5.5		7.0	5.5	2.5		10.0	8.5		9.5				
13-14	1.5					5.0		5.0		6.0	7.5			5.0				8.0		11.5	12.0		9.5
14-15	8.0	6.5				7.0		4.0		6.5		8.5	5.0				7.0			5.5	4.5		
15-16	4.0					9.5	5.5	3.0		7.0	9.0	4.0		5.0		7.5		6.5	9.0				
16-17	10.0				1.5	11.5	4.5		3.0	7.0	5.0	10.0	4.5		10.0		5.5			11.5	7.0		
17-18	6.0				5.5	0.5	3.0		3.5	7.5		5.5		4.5		12.0		5.0					
18-19	2.0			12.5	9.5	2.5		5.0	4.0	8.0	6.5		4.5					9.0	9.0		10.0		
19-20	8.0					5.0		3.5	4.5			7.0		4.0			8.0			11.0			
20-21	4.0			3.5		7.0	5.5		4.5		8.0		4.0			9.5		7.5					
21-22	0.0	6.5				9.0	4.0		5.0		4.0	8.5		4.0			7.0		8.5		5.0		
22-23	6.0					11.5	3.0	5.5	5.5		9.5	4.5	3.5					6.0		11.0			
23-24	2.0			10.0	1.0	0.5		4.5	6.0		5.5			3.5	8.0	7.5	5.5				7.5		
24-25	8.0				5.0	2.5		3.5	6.0			6.0	3.5				9.5	4.5	8.5				
25-26	4.5			1.0	9.0	4.5	5.0		6.5		7.0			3.0		11.5		8.5		10.5	10.0		
26-27	0.5				12.5	7.0	3.5		7.0			7.5	3.0				8.0						
27-28	6.5					9.0		5.5	7.5	3.0	8.5	3.5		3.0				7.0	8.0				

	AI	TZ	YY	YY	RW	AF	SZ	TU	UX	CC	CT	AV	DF	DF	DI	DK	SW	SW	VX	CM	CO	CO	Y
	DRA	ERI	ERI	ERI	GEM	GEM	HER	HER	HER	HER	HER	HYA	HYA	HYA	HYA	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LEO
MAX	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	11	11	10.5	9.2	9.2	10.9	8.5	10.5	10.5	9.5
MIN	8.2	12.6	9.1	9.1	11.6	11.3	12	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12	11	10	10	12.3	9.5	11	11	12.7
DUR	4	4	3	3	5	4	4	5	5	4	4	4	4	4	4	4	3	3	4	4	5	5	5
TOT		1			1			1															
				(S)									(S)				(S)				(S)		
0- 1			0.5	4.0	4.0							7.0	3.5	7.5	4.0						12.0		
1- 2				3.5		5.0	10.0	7.0					3.0	7.0	9.5		2.5						
2- 3				2.5					11.5			8.0	3.0	7.0			1.5				1.0		
3- 4	5.5	4.0	5.5	1.5	0.5					11.5	11.5		3.0	7.0	5.5		1.0						7.0
4- 5	10.5		4.5	0.5								9.0	2.5	6.5		3.5				12.0			
5- 6			3.5				12.0					1.5	2.5	6.5	2.0	4.5	3.0		12.5		3.0		
6- 7			3.0			4.5	7.5					10.5	2.0	6.0	7.5	5.5	2.0			2.5			
7- 8			2.0									3.0	2.0	6.0		6.5	1.0						
8- 9			1.0	5.0								11.5	2.0	6.0	3.5	7.5	0.0				5.0		8.5
9-10	5.5		0.5	4.0								4.0	1.5	5.5	9.0	8.5							
10-11	10.0			3.5			10.0	9.0		10.0			1.5	5.5		9.5		2.0				12.0	1.0
11-12				2.5		3.5						5.0	1.5	5.0	5.5			1.5					
12-13			5.5	1.5		9.5					10.0		1.0	5.0				0.5		12.5		1.0	
13-14			4.5	1.0								6.5	1.0	5.0	1.5				1.0				10.0
14-15			4.0				12.0						0.5	4.5	7.5		2.5						
15-16	5.5		3.0				7.5					7.5	0.5	4.5			1.5					3.0	2.5
16-17	10.0	5.0	2.0			3.0		10.0					0.5	4.0	3.5	3.5	0.5						
17-18			1.0	5.0	8.5	9.0				8.5		9.0		4.0	9.0	4.5					11.0		
18-19			0.5	4.0								1.0	8.0	4.0		5.5		2.5				5.0	11.0
19-20				3.5			10.0	10.5	12.5			10.0	7.5	3.5	5.5	6.5		1.5			0.0		
20-21				2.5	5.5							2.5	7.5	3.5		7.5		1.0		13.0			3.5
21-22	5.0			1.5		2.5					8.0	11.0	7.0	3.5	1.5	8.5							
22-23	10.0		4.5	1.0		8.5						3.5	7.0	3.0	7.0	9.5	3.0				2.0		
23-24			4.0		2.0		12.0						7.0	3.0			2.0						12.5
24-25		0.5	3.0				7.5					5.0	6.5	2.5	3.5		1.0						
25-26			2.0										6.5	2.5	9.0		0.0				4.0		5.0
26-27			1.5	5.0		2.0						6.0	6.5	2.5									
27-28	5.0		0.5	4.5		7.5							6.0	2.0	5.0		2.0	0.5				11.0	

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

	U	V505	1968	AO	CC	CC	RW	RZ	TY	WY	AC	EQ	EQ	V	X	RV	W	W	TX	TY	TY	UX	VV
	SGE	SGR	SGR	SER	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA
MAX	6.4	6.4	12.3	10.6	11.1	11.1	8	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
MIN	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12	11.7	12.3	11	11	11.9	12	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11
DUR	6	5	4	4	4	4	4	3	2	4	6	3	3	4	4	4	3	3	6	3	3	1	3
TOT	2						1																
						(S)							(S)					(S)			(S)		
0- 1						11.0						6.5	2.5				1.5	5.5		1.5	5.5	3.5	3.5
1- 2						12.0		3.5		8.5			3.0				1.5	5.5		3.0	7.0	7.5	12.5
2- 3		13.0				6.5				1.0			3.5	1.5		2.0	1.5	5.5		4.5	0.0	2.5	5.0
3- 4						7.0		5.5				0.0	4.0				1.5	5.5		6.0	1.5	7.0	
4- 5						8.0		1.5		3.0		0.5	4.5				1.5	5.5		7.5	3.0		6.5
5- 6				10.5	8.5		4.0		1.5			1.0	5.5			2.0	1.5	5.5		0.5	5.0	6.0	
6- 7				7.5	9.5			3.5	3.5	5.0		2.0	6.0	3.5			1.5	5.5		2.0	6.5		8.0
7- 8			11.5		10.0				5.0			2.5	6.5				1.5	5.5		3.5	8.0	5.0	0.5
8- 9					11.0			5.5	7.0	6.5		3.0				2.5	1.5	5.5		5.0	1.0		9.5
9-10					12.0			1.5				3.5		2.0			1.5	5.5		6.5	2.5	4.5	2.0
10-11						6.5		7.0		8.5	1.0	4.0					1.5	5.5		8.0	4.0	8.5	11.0
11-12						7.0		3.0		1.0		4.5	0.5			3.0	1.5	5.5		1.0	5.5	3.5	3.5
12-13				11.5		8.0					2.0	5.0	1.0	0.0			1.5	5.5		2.5	7.0	8.0	12.5
13-14				8.5		8.5		5.0		3.0		6.0	1.5	4.5			1.5	5.5		4.0	8.5	3.0	5.0
14-15						9.5		1.0			3.0	6.5	2.5			3.0	2.0	6.0		5.5	1.5	7.0	
15-16						10.0		7.0		5.0			3.0				2.0	6.0		7.5	3.0	2.0	6.5
16-17			12.0			11.0	6.0	3.0			4.0		3.5	2.5			2.0	6.0		0.5	4.5	6.5	
17-18						11.5				7.0			4.0			3.5	2.0	6.0		2.0	6.0		8.0
18-19					6.5			4.5			5.0	0.5	4.5				2.0	6.0		3.5	7.5	5.5	0.5
19-20				12.5	7.0		0.5	0.5	1.5	9.0		1.0	5.0	0.5			2.0	6.0		5.0	0.5		9.5
20-21				9.5	8.0			6.5	3.5	1.5	6.0	1.5	5.5	5.0		4.0	2.0	6.0	0.5	6.5	2.0	4.5	2.0
21-22					8.5			2.5	5.5			2.0	6.5				2.0	6.0		8.0	3.5	9.0	11.0
22-23					9.5				7.0	3.5		3.0			4.5		2.0	6.0		1.0	5.0	4.0	3.5
23-24	11.5				10.0			4.5				3.5		3.0	4.0	4.0	2.0	6.0	2.0	2.5	6.5	8.5	12.5
24-25					11.0			0.5		5.0		4.0			3.5		2.0	6.0		4.0	8.5	3.0	5.0
25-26			12.0		11.5			6.5				4.5	0.5		2.5		2.0	6.0		5.5	1.5	7.5	
26-27								2.5		7.0		5.0	1.0	1.5	2.0	4.5	2.0	6.0	3.5	7.0	3.0	2.5	6.5
27-28				10.0		7.0						5.5	1.5		1.5		2.0	6.0		0.0	4.5	6.5	

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	RT	TW	UU	WZ	XZ	AB	AD	AD	BD	BX	DS	XZ	OO	OO	V342	V343	V346	SS	SS	WW	WW	AP	AP
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQL	AQL	AQL	AQL	AQL	AQL	ARI	ARI	AUR	AUR	AUR	AUR
MAX	9.3	8.8	11.2	11.6	10	9.3	11.1	11.1	11.3	8.6	10.8	9.3	9.2	9.2	9	10.6	9	10.1	10.1	5.7	5.7	10.9	10.9
MIN	10.2	11	14.1	12.6	13	10.2	11.6	11.6	11.7	9.5	11.4	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	11	8	4	3	3	4	4	3	4	4	7	3	3	7	4	4	3	3	5	5	4	4
TOT		2													3								
						(S)		(S)			(S)			(S)				(S)		(S)		(S)	
0- 1	11.0						12.5	0.5					11.0						3.0			9.0	2.5
1- 2	2.0		2.0	0.5			12.0						11.5					3.5					5.5
2- 3							11.5		2.0	3.5			11.5									2.0	9.0
3- 4				3.0	2.5		11.5				0.5		12.0		11.5					1.5		5.5	
4- 5			1.5				11.0		9.5		1.0										8.0	9.0	2.0
5- 6	11.5						10.5				1.0												5.5
6- 7	2.5						10.5				1.5	12.0											2.0
7- 8		2.0	0.5		4.0					1.0	1.5								0.5				5.0
8- 9									2.5		2.0							1.0		3.0			8.5
9-10									0.5		2.0					10.5			1.5				5.0
10-11	12.5			2.0					10.0	2.0	2.5								1.5			1.5	8.5
11-12											2.5								2.0				5.0
12-13	9.5										3.0								2.5			8.0	1.5
13-14	0.5									3.5	3.0			9.0					2.5	4.0			4.5
14-15											3.5			9.5					3.0			1.0	8.0
15-16									1.0		3.5			10.0									4.5
16-17									10.5	4.5	4.0			10.0		9.5							8.0
17-18	10.5			1.0										10.5	12.0								4.5
18-19	1.5				0.5									11.0						5.0		1.0	7.5
19-20				3.0										11.0									4.0
20-21														11.5		9.5							7.5
21-22									1.5	1.5		11.5		11.5		12.0			0.5				4.0
22-23	11.0				2.5				11.0					12.0					1.0			0.5	7.5
23-24	2.0																	1.5		6.5		4.0	
24-25										3.0									2.0				7.0
25-26																			2.0				3.5
26-27				2.0	4.0														2.5				7.0
27-28	12.0								2.0	4.0						11.0		3.0			1.5	3.5	
28-29																			3.0	7.5		7.0	
29-30						1.5	3.0			9.5													3.5
30-31						1.0	2.5										11.0						6.5

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	AR	AR	CL	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	ZZ	Y	SV	AL	CD	CD	R	RT	SX	TU	TZ
	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA	CMA	CMA	CMA	CMA
MAX	6	6	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					0.5			6.0	7.5	3.5	3.0	6.5				6.0	1.5	11.0					
1- 2								5.5	6.0			4.0			4.5		5.0		2.5	0.5			
2- 3			3.5	4.0		4.0		5.0	5.0		5.0				9.0		9.0		5.5				
3- 4								4.0	4.0			6.0		3.0			3.0	12.5					
4- 5					7.0		7.5	3.5		6.5	7.0	3.5	3.5		4.0	6.0	6.5						
5- 6				3.0			6.5	3.0		5.5	4.0				8.5		10.0	1.0					
6- 7				7.0			6.0			4.0		5.0		10.5			4.5			4.5			
7- 8			3.0		3.5		5.5		7.0	3.0	6.0	2.5			3.0		8.0				3.5	1.0	
8- 9				2.0			5.0		5.5		3.5				7.5	5.5	11.5	2.5				4.0	
9-10				6.0		6.5	4.0		4.5			4.5	3.0		12.0		6.0		1.5				
10-11							3.5	7.5	3.5	7.0	5.5				2.0		9.5		4.5	2.0			
11-12				0.5			3.0	6.5		6.0	3.0	6.5			6.5		3.5						
12-13			2.5	5.0		3.0		6.0		5.0		4.0			11.0	5.0	7.0				0.5		5.0
13-14								5.5	7.5	3.5	5.0			1.0	1.5		10.5						
14-15					6.0			4.5	6.0			6.0	3.0		6.0		5.0						
15-16				4.0				4.0	5.0		6.5	3.0			10.5		8.5						
16-17							7.5	3.5	4.0		4.0			8.5	0.5	4.5	3.0	12.0				1.5	1.0
17-18			2.0		2.5		6.5	3.0		6.5		5.0			5.0		6.5					4.5	
18-19				3.0			6.0			5.5	6.0				9.5		10.0	0.5	3.5				
19-20				7.5		5.5	5.5			4.0	3.5	7.0	2.5				4.0			3.0			
20-21							4.5		7.0	3.0		4.5			4.0	4.5	7.5				3.5		
21-22		2.0		2.0			4.0		5.5		5.5				8.5	12.0	11.5	2.0					
22-23			1.5	6.0		2.0	3.5	7.5	4.5		3.0	6.5					5.5						
23-24	3.5						3.0	6.5	3.5	7.0		3.5			3.5		9.0						
24-25				0.5	5.0			6.0		6.0	4.5		2.5		8.0	4.0	3.5						
25-26		5.0		5.0				5.5		5.0		5.5			12.5	12.0	7.0				0.5	2.0	
26-27								4.5	7.5	3.5	6.5	3.0		6.5	2.5		1.5	10.5	2.5				
27-28	7.0		1.0		1.5			4.0	6.5		4.0				7.0		5.0		5.5				
28-29			6.5	4.0			7.5	3.5	5.0			5.0			11.5	3.5	8.5			4.5			
29-30						4.5	6.5	2.5	4.0		6.0		2.5		1.5	11.5	2.5	12.0					
30-31							6.0			6.5	3.5	7.0			6.0		6.0						

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

	SU	WZ	WZ	XX	DK	DL	DV	EG	RW	RW	RZ	RZ	SS	SS	CC	CC	U	RW	W	W	RV	RV	V
	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	COM	COM	COM	COM	COM	COM	COM	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT
MAX	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	11	11	10	10	10.9	10.9	11	11	7.6	10.1	10.6	10.6	9	9	9.5
MIN	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	11.9	8.8	10.6	11.2	11.2	10	10	10.2
DUR	4	3	3	4	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4
TOT			(S)						(S)		(S)		(S)		(S)					(S)		(S)	
0- 1		7.5	2.5	7.0		7.0		11.0	1.5	4.0	7.5	3.5	4.0	9.0	2.5	5.5		9.5	6.5			10.5	5.5
1- 2		3.5	8.5							3.0	8.0	4.0		5.0	5.0	2.5					5.5		4.0
2- 3		9.5	4.5					2.5	4.5	1.5		4.5	6.0		2.5	5.0	5.5		5.0		8.0		8.0
3- 4		5.5	0.5				4.0	4.5	3.5			4.5		6.5	5.0	2.0		7.0	9.0	4.5		10.0	
4- 5	11.0	1.5	6.5				8.0	6.5	2.0	5.0		5.0	7.5	2.5	2.0	4.5			3.5	8.0		4.0	
5- 6	8.5	7.5	2.5				12.0	8.5	1.0	3.5	1.5	5.5	3.0	8.0	4.5	2.0		11.5	7.5	3.0	7.5		3.5
6- 7		3.5	8.5					11.0	5.5	2.5	1.5	6.0	9.0	4.0	1.5	4.5		5.0		7.0		10.0	
7- 8		9.5	4.5	7.5				4.0	1.5	2.0	6.0	4.5	9.5	4.0	1.5				6.0			3.5	6.0
8- 9	1.5	5.5	0.5			11.0		2.0	3.0		2.5	6.5		5.5	1.5	4.0		9.0		5.5	7.0		
9-10		2.0	7.0					4.0	1.5	4.5	3.0	7.0	6.0		4.0	1.0			4.5	9.5		9.5	8.5
10-11		8.0	3.0			2.0	3.5	6.5		3.5	3.0	7.5	2.0	7.0	1.0	3.5			8.5	4.0			
11-12		4.0	9.0				7.5	8.5	5.0	2.0	3.5	7.5	7.5	3.0	3.5	1.0		7.0	3.0	8.0	7.0		
12-13		10.0	5.0				11.5	10.5	4.0	1.0	4.0	8.0	3.5	8.5		3.5			7.0			9.0	4.0
13-14	11.5	6.0	1.0			8.0			2.5	5.5	4.5		9.5	4.5	3.0			11.0		6.5			
14-15	9.0	2.0	7.0	7.5	12.5			2.0	1.5	4.0	4.5		5.0		3.0			4.5	5.5		6.5		6.5
15-16		8.0	3.0		12.0			4.0		3.0	5.0			6.0	3.0					5.0		9.0	
16-17		4.0	9.0		11.5			6.0	4.5	2.0	5.5	1.5	6.5	1.5	5.0	2.5		9.0	4.5	9.0			9.0
17-18	2.0		5.0		11.5		3.0	8.5	3.5		6.0	2.0	2.5	7.5	2.5	5.0				8.0	3.5	6.5	
18-19		6.0	1.0		11.0		7.0	10.5	2.0	5.0	6.0	2.0	8.0	3.0	5.0	2.5				3.0	7.5		8.5
19-20		2.0	7.0		10.5		10.5		1.0	4.0	6.5	2.5	4.0	9.0	2.0	4.5	11.5	6.5	7.0				4.5
20-21		8.5	3.5		10.5			1.5	5.5	2.5	7.0	3.0	9.5	4.5	4.5	2.0				6.0	6.0		
21-22		4.5	9.5	8.0	10.0	12.0		4.0	4.0	1.5	7.5	3.5	5.5		2.0	4.5		11.0	5.5			8.5	7.0
22-23	11.5		5.5		9.5			6.0	3.0		7.5	3.5		6.5	4.0	1.5		4.5	9.5	4.5			
23-24	9.5	6.5	1.5		9.5	3.0		8.0	2.0	4.5	8.0	4.0	7.0	2.0	1.5	4.0			4.0	8.5	6.0		9.5
24-25		2.5	7.5		9.0		2.0	10.0		3.5		4.5	3.0	8.0	4.0	1.5		8.5	8.0	3.0		8.0	2.5
25-26		8.5	3.5		8.5		6.0	12.5	5.0	2.0		5.0	8.5	3.5	1.0	4.0				7.0			
26-27		4.5	9.5		8.5	9.5	10.0	1.5	4.0	1.0		5.0	4.5	9.5	3.5	1.0	9.5		6.5		5.5		5.0
27-28		0.5	5.5		8.0			3.5	2.5	5.5	1.5	5.5		5.0	1.0	3.5		6.5		5.5		8.0	
28-29		6.5	1.5	8.0	7.5			5.5	1.5	4.5	2.0	6.0	6.0		3.5				5.0				7.5
29-30		2.5	7.5		7.5			8.0		3.0	2.0	6.0	2.0	6.5		3.0		10.5	9.0	4.5	5.5		
30-31		8.5	3.5		7.0			10.0	4.5	2.0	2.5	6.5	7.5	2.5	3.0			4.0	3.5	8.0		7.5	10.0

	Y	SW	WW	ZZ	AE	BR	CG	DK	KV	V346	V387	V388	V456	V466	V466	V477	V477	V704	TY	YY	FZ	Z	RZ	
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DRA	DRA	
MAX	7	9.3	9.9	10.7	11.8	9.4	11	10.3	11.5	11.8	11.5	9.7	10.8	10.8	10.8	8.3	8.3	13.8	9.6	11	10.2	10.8	10	
MIN	7.6	11.8	13.2	12	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	10.8	12	11.3	13.6	10.9	
DUR	6	5	5	4	4	4	3	4	5	5	3	3	3	4	4	4	4	4	4	4	3	4	3	
TOT		2																						
															(S)		(S)							
0- 1							12.5			10.0	10.0							9.5				3.5		
1- 2			12.5			12.5																12.5	4.0	
2- 3	9.5			12.0			10.0						10.0										6.0	
3- 4																				12.5			8.5	
4- 5				9.5				11.0										9.5				5.5	11.0	
5- 6	9.5					12.5		9.5						9.5			8.5							
6- 7											10.0													
7- 8							11.0		11.0	11.0					12.0					11.5			5.0	
8- 9	9.5																	9.0				7.0	7.5	
9-10				10.0		12.5				9.0						8.5							10.0	
10-11													10.5									11.0		
11-12	9.5		11.0	7.5									8.0							10.5				
12-13							12.5	11.0				10.5		8.5			9.5	9.0	11.5			9.0	4.0	
13-14							12.0	9.5										12.5					6.5	
14-15	9.5			11.0			9.5				12.0				11.0								9.0	
15-16										12.5										10.0			2.0	11.5
16-17				8.0							10.0						9.5		9.0				10.5	
17-18	9.0	10.0					12.0											12.5			12.5			
18-19												11.0	11.0						10.5				5.5	
19-20				11.5			11.0						8.5				10.5						4.0	8.0
20-21	9.0				12.0			11.0											9.0			12.5	10.5	
21-22			10.0	9.0	11.0	12.0		9.5							10.0			12.0						
22-23					10.5																			
23-24	9.0				9.5						11.5			12.0		10.5						5.5	4.5	
24-25				12.0			12.0		11.5			11.0							8.5				7.0	
25-26						12.0					9.5							12.0					9.5	
26-27	9.0			9.5			9.5			12.0			11.5				11.5			12.5			12.0	
27-28													9.0									7.5		
28-29								11.0							9.0				8.5		11.5		3.5	
29-30	9.0					12.0		9.5										12.0					6.0	
30-31										12.5	11.5			11.0		11.0				11.5			8.5	

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

	ER	ER	ET	FL	FT	FZ	FZ	GU	GU	AQ	GP	Z	RT	RV	ST	XZ	BETA	UZ	UZ	U	V505	1968	AO
	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	PEG	PEG	PER	PER	PER	PER	PER	PER	PUP	PUP	SGE	SGR	SGR	SER
MAX	9.5	9.5	11.2	10.5	9.1	10.7	10.7	12.6	12.6	10.3	10.2	9.9	10.6	10.3	9.7	10.6	2.2	9.7	9.7	6.4	6.4	12.3	10.6
MIN	10.2	10.2	12.4	13.2	9.7	11.3	11.3	13.5	13.5	13	11	12.4	12	12.7	13.2	12.7	3.5	10.6	10.3	9.1	7.6	13.3	12.1
DUR	3	3	5	3	4	3	3	4	4	12	4	6	4	8	5	4	8	4	4	6	5	4	4
TOT										4		2			1					2			
		(S)					(S)		(S)										(S)				
0- 1	3.5			5.0		0.5	5.5	4.5					3.5					1.0					7.5
1- 2						5.5	0.5	3.0						2.5		3.5			6.0			11.0	
2- 3		1.5				0.5	5.5	1.5								7.0			1.0				
3- 4	3.0					5.5	0.5		6.0					2.0			5.0	5.5					
4- 5		4.0	5.0			0.5	5.5		4.5									0.5					
5- 6		0.5	3.5			5.5	0.5		3.0				5.5	1.5					5.0			9.5	
6- 7	2.0		2.5			0.5	5.5		1.5				2.0		2.0		2.0				11.5	12.5	11.0
7- 8		3.5	1.5			5.5	0.5	6.0						0.5				5.0					8.0
8- 9						0.5	5.5	4.5				1.5				1.0							5.5
9-10	1.0					5.5	0.5	3.0								5.0							
10-11		2.5				0.5	5.5	1.5											4.5				
11-12	4.0			1.5		5.5	0.5		6.0			3.0	4.5					4.5					
12-13						0.5	5.5		4.5				0.5							9.0			
13-14		1.5			3.0	5.5	0.5		3.0										4.0				12.0
14-15	3.0			4.0		0.5	5.5		1.5			4.0			1.0							9.5	9.0
15-16		4.5				5.5	0.5	6.0			12.0							3.5					6.0
16-17		0.5			6.5	0.5	5.5	4.5			11.5					2.5							
17-18	2.0					5.5	0.5	3.0					3.0			6.5			3.5				
18-19		3.5				0.5	5.5	1.5															
19-20						5.5	0.5		6.0									3.0			11.5	11.5	
20-21	1.0					0.5	5.5		4.5														
21-22		2.5				5.5	0.5		3.0	11.0									2.5				10.0
22-23	4.0					0.5	5.5		1.5				5.5							12.5			7.0
23-24						5.5	0.5	6.0					1.5			0.5		2.5				10.0	
24-25		2.0	4.0			0.5	5.5	4.5								4.0							
25-26	3.0		3.0	0.5		5.5	0.5	3.0											2.0				
26-27		4.5	2.0			0.5	5.5	1.5									3.5	6.5					
27-28		1.0	0.5			5.5	0.5		6.0									2.0					
28-29	2.5			3.0		0.5	5.5		4.5				4.0						6.5			11.5	10.5
29-30		3.5				5.5	0.5		3.0										1.5				8.0
30-31						0.5	5.5		1.5									6.0					5.0

	CC	CC	RW	RZ	TY	WY	AC	AM	EQ	EQ	V	X	RV	W	W	TX	TY	TY	UX	VV	XZ	ZZ	RU
	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI
MAX	11.1	11.1	8	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
MIN	11.7	11.7	12.5	11.2	12	11.7	12.3	12.3	11	11	11.9	12	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11	11.7	11.2	11.4
DUR	4	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4
TOT			1																				
		(S)							(S)						(S)			(S)					
0- 1		8.0		4.0						2.0		0.5		2.0	6.0		1.5	6.0	1.5	7.5			2.5
1- 2		8.5				1.5		0.5		2.5				2.0	6.0	5.0	3.0	7.5	6.0		4.0	6.0	3.5
2- 3		9.5	2.0							3.5				2.0	6.0		4.5		0.5	9.0	9.5		5.0
3- 4		10.0		2.0		3.5		1.5		4.0				2.0	6.0		6.0	2.0	5.0	1.5			6.0
4- 5	4.5	11.0								4.5				2.0	6.0	6.5	7.5	3.5	9.5	10.5			7.5
5- 6	5.5	11.5		4.0	1.5	5.5		2.5	1.0		2.0			2.0	6.0		0.5	5.0	4.5	3.0			8.5
6- 7	6.5				3.5					1.5				2.0	6.0		2.5	6.5	8.5	12.0	1.5		9.5
7- 8	7.0					7.0		4.0	2.0					2.0	6.0	8.0	4.0	8.0	3.5	4.5	7.0		11.0
8- 9	8.0			1.5						2.5				2.0	6.0		5.5	1.0	8.0		12.0	4.0	12.0
9-10	8.5							5.0	3.5					2.5	6.5		7.0	2.5	2.5	6.0			0.5
10-11	9.5			3.5		1.5				4.0				2.5	6.5	9.5	8.5	4.0	7.0			11.0	2.0
11-12	10.0							6.0	4.5					2.5	6.5		1.5	5.5	2.0	7.5			3.0
12-13	11.0	4.5		5.5		3.5				1.0	2.5			2.5	6.5		3.0	7.0	6.0		4.0		4.5
13-14	11.5	5.5	4.0	1.5						1.5				2.5	6.5	11.0	4.5		1.0	9.0	9.5		5.5
14-15		6.0				5.5				2.0			0.5	2.5	6.5		6.0	1.5	5.5	1.5			6.5
15-16		7.0		3.5						2.5	0.5			2.5	6.5		7.5	3.5		10.5		1.5	8.0
16-17		8.0				7.5				3.0				2.5	6.5	12.5	0.5	5.0	4.5	3.0			9.0
17-18		8.5		5.0						4.0			1.0	2.5	6.5		2.0	6.5	9.0	12.0	1.5	8.5	10.5
18-19		9.5		1.0						4.5				2.5	6.5		3.5	8.0	4.0	4.5	7.0		11.5
19-20		10.0			2.0	2.0				1.0	5.0	3.0		2.5	6.5		5.0	1.0	8.0		12.0		
20-21	4.5	11.0		3.0	3.5					1.5			1.0	2.5	6.5		6.5	2.5	3.0	6.0			1.5
21-22	5.5	11.5				3.5				2.0				2.5	6.5		8.0	4.0	7.5				2.5
22-23	6.0	12.5		5.0						2.5		1.0		2.5	6.5		1.0	5.5	2.0	7.5			3.5
23-24	7.0			1.0		5.5				3.0			1.5	2.5	6.5		2.5	7.0	6.5		4.0		5.0
24-25	7.5									3.5				2.5	6.5		4.0	8.5	1.5	9.0	9.5	6.0	6.0
25-26	8.5			3.0						4.5				2.5	6.5		6.0	1.5	5.5	1.5			7.0
26-27	9.5								5.0	1.0			2.0	2.5	6.5		7.5	3.0	0.5	10.5			8.5
27-28	10.0			4.5						1.5				2.5	6.5			4.5	5.0	3.0			9.5
28-29	11.0	4.5		0.5		2.0				2.0				2.5	6.5		2.0	6.0	9.0	12.0	1.5		11.0
29-30	11.5	5.5					1.0			2.5	1.5		2.0	2.5	6.5		3.5	7.5	4.0	4.5	7.0		12.0
30-31	12.5	6.0		2.5		4.0				3.0		3.5		2.5	6.5		5.0	0.5	8.5		12.0		0.5

AAVSO Eclipsing Binary Ephemeris for April 2022

all times in U.T.

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	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	ZZ	Y	SV	AL	CD	CD	R	RT	SX	TU	TZ	TZ	UU	XZ
	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA	CMA	CMA	CMA	CMA	CMA	CMA	CMI
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	11.4	10.3	9.7	9.8	9.8	10	9.7
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	12.9	11.4	10.7	10.5	10.5	12.5	10.2
DUR	3	3	3	3	3	3	3	3	3	5	6	3	5	5	5	4	5	4	4	4	4	5	3
TOT			(S)		(S)		(S)		(S)	(S)					(S)						(S)		
0- 1	3.0			5.5	1.5	1.5	5.5		4.5			10.5		9.5								2.0	
1- 2				4.5			4.5	5.0	1.5				3.5	4.0			1.5						
2- 3				4.0		7.0	3.0	2.5	6.0			5.5	11.0		7.5			3.5					4.0
3- 4	2.0	4.0		3.5	7.5	6.0	2.0		3.5	2.0		10.0		11.0	2.0	1.0			2.5				
4- 5				2.5	6.5	4.5		4.5	1.0					5.5		4.5							
5- 6				2.0	6.0	3.5	7.0	2.0	5.5		4.5	4.5	3.0		9.0								1.5
6- 7				1.5	5.5	2.5	6.0	6.5	3.0			9.0	11.0		3.0						2.5		5.5
7- 8	5.0				4.5	1.0	5.0	4.0						6.5									
8- 9			3.5		4.0	7.5	3.5	1.5	5.0	2.0		3.5		1.0	10.5								
9-10				7.5	3.5	6.5	2.5	6.0	2.0			8.0	2.5		4.5								3.0
10-11	4.0			6.5	2.5	5.0	1.5	3.0	7.0				10.5	8.0				3.0					
11-12				6.0	2.0	4.0			4.0			3.0		2.5	11.5								
12-13				5.5	1.5	3.0	6.5	5.0	1.5			7.5			6.0	3.0							
13-14	3.0	3.0		4.5		1.5	5.5	2.5	6.0	1.5		11.5	2.0	9.5								2.0	4.0
14-15				4.0			4.5	7.0	3.5			2.0	10.0	4.0									
15-16				3.5	7.0	7.0	3.0	4.5			2.5	6.5			7.5			3.5					
16-17	2.0			2.5	6.5	6.0	2.0	2.0	5.5			11.0		11.0	1.5								1.5
17-18				2.0	6.0	4.5		6.5	3.0			1.0	2.0	5.0									5.5
18-19			2.5	1.5	5.5	3.5	7.5	4.0		1.5	10.0	5.5	9.5		8.5								
19-20					4.5	2.5	6.0	1.0	4.5			10.0			3.0								
20-21	5.0				4.0	1.0	5.0	5.5	2.0					6.5		2.0							3.0
21-22				7.0	3.5		4.0	3.0	6.5			5.0	1.5		10.0								
22-23				6.5	2.5	6.5	2.5		4.0			9.0	9.5		4.5								
23-24	4.0	2.0		6.0	2.0	5.5	1.5	5.0	1.5	1.5				8.0			1.5						
24-25				5.5	1.5	4.0		2.5	6.0			4.0		2.0	11.5								4.0
25-26				4.5		3.0	7.0	7.0	3.5			8.5	1.0		5.5								
26-27	3.0			4.0		2.0	5.5	4.5					9.0	9.5								2.0	
27-28				3.5	7.0		4.5	1.5	5.5			3.0		3.5						2.0			1.5
28-29			1.5	2.5	6.5	7.0	3.5	6.0	2.5	1.0	8.0	7.5			7.0			3.0					5.5
29-30	2.0			2.0	6.0	6.0	2.0	3.5						10.5	1.5	4.0			1.0		1.0		

	AK	RW	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	PV	V364	V364	V375	U	SU	WZ	WZ	XX	
	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	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	10	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	1.5			9.0		4.5	7.5	3.5					9.0					11.0			5.0	10.0		
1- 2	4.5						6.5	2.5		8.5		1.5								9.5		6.0		
2- 3			9.0				5.5	1.5												7.5	7.0	2.0		
3- 4							4.5		7.0	9.5		9.0						9.5			3.0	8.0		
4- 5						7.0	3.5	7.0					3.0						3.5		9.0	4.0	8.5	
5- 6	3.5			4.0	11.0		2.5	6.0		10.5			8.5								5.0	10.0		
6- 7				8.5			1.5	5.0	10.5		10.0			8.0							1.0	6.0		
7- 8								4.0		11.5					6.0						7.0	2.0		
8- 9						9.5	7.0	3.0			6.0							10.5			3.0	8.0		
9-10	2.5				2.0		6.0	2.0					2.5								7.0	3.0	9.0	4.0
10-11							5.0	1.0	9.0		2.5		8.5								10.0	5.0		
11-12				3.5		3.0	3.5	7.5													7.5	1.0	6.0	9.0
12-13				8.0		11.5	2.5	6.5													5.0	7.5	2.5	
13-14	2.0						1.5	5.5						8.0			1.5					3.5	8.5	
14-15	5.0							4.5		7.0			2.0		6.0				3.0		9.5	4.5		
15-16						5.5	7.0	3.5	2.0				8.0					4.5			5.5			
16-17		11.5			8.0		6.0	2.5		8.0												1.5	6.5	1.0
17-18				3.0			5.0	1.5	10.5		11.0											7.5	2.5	
18-19	4.0			7.5			4.0			9.0		10.5				11.0		3.0			3.5	8.5	9.0	
19-20			11.0			7.5	3.0	7.0			7.5		1.5						2.5	10.5	9.5	4.5		
20-21							2.0	6.0		10.0			7.5	8.5							8.0	5.5		
21-22							1.0	5.0	8.5						6.0			2.0			5.5	1.5	6.5	
22-23	3.0					1.5	7.5	3.5		11.0											7.5	2.5		
23-24				2.0		10.0	6.5	2.5				2.0									4.0	9.0	1.0	
24-25				7.0			5.5	1.5					1.0						2.0		10.0	5.0		
25-26				11.5	9.5		4.5				9.5	7.0				10.0					6.0		9.5	
26-27	2.0					3.5	3.5	7.0	1.5													2.0	7.0	
27-28	5.5						2.5	6.0						8.5								8.0	3.0	
28-29							1.5	5.0	10.0						6.0			10.5		10.5	4.0	9.0		
29-30			10.5	1.5			4.0												2.0	8.5		5.0		

	DK	DL	DV	EG	RW	RW	RZ	RZ	SS	SS	CC	CC	U	RW	W	W	RV	RV	V	Y	SW	WW	ZZ
	CEP	CEP	CEP	CEP	COM	COM	COM	COM	COM	COM	COM	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG
MAX	12.2	12.4	11.6	9.6	11	11	10	10	10.9	10.9	11	11	7.6	10.1	10.6	10.6	9	9	9.5	7	9.3	9.9	10.7
MIN	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	10	10.2	7.6	11.8	13.2	12
DUR	4	5	4	3	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	6	5	5	4
TOT																							2
						(S)		(S)		(S)		(S)				(S)		(S)					
0- 1	6.5	6.5	1.5		3.5		3.0	7.0	3.5	8.5		3.0			7.5	3.0		1.5	3.0			9.0	10.0
1- 2	6.0		5.5	1.0	2.5	5.0	3.5	7.5	9.0	4.0	2.5	5.0		8.5	2.0	7.0	5.0			8.5			
2- 3	6.0		9.5	3.5	1.0	4.0	3.5	7.5	5.0	10.0	5.0	2.5	7.0	2.0	6.0	1.5		7.5	5.5				7.5
3- 4	5.5			5.5	5.5	2.5	4.0	8.0			5.5	2.5	5.0			5.5							
4- 5	5.0			7.5	4.5	1.5	4.5		6.5	1.5	4.5	2.0		6.0	4.5		5.0		8.0	8.5			
5- 6	5.0			9.5	3.0		5.0		2.0	7.0	2.0	4.5			8.5	4.0		7.0	1.0				11.0
6- 7	4.5				2.0	4.5	5.0	1.0	8.0	3.0	4.5	2.0		10.5	3.0	8.0							
7- 8	4.0			1.0		3.5	5.5	1.5	3.5	8.5	1.5	4.0		4.0	7.0	2.5	4.5		3.5	8.5			8.0
8- 9		10.5	4.5	3.0	5.0	2.5	6.0	2.0	9.5	4.5	4.0	1.5			2.0	6.5		7.0					
9-10			8.5	5.0	4.0	1.0	6.5	2.0	5.5		1.5	4.0	5.0	8.0	5.5	1.0			6.0		7.0		5.5
10-11				7.5	2.5	5.5	6.5	2.5	1.0	6.0	3.5	1.0				5.0	4.5			8.5		8.0	11.5
11-12				9.5	1.5	4.5	7.0	3.0	7.0	2.0	1.0	3.5			4.5	9.0		6.5					
12-13				11.5		3.0	7.5	3.5	2.5	7.5	3.5			6.0	8.5	3.5			1.5				9.0
13-14		7.5			5.0	2.0	8.0	3.5	8.5	3.5		3.0			3.0	7.5	4.0			8.5			
14-15				3.0	3.5			4.0	4.0	9.0	3.0			10.0	7.0	2.0		6.5	4.0				6.0
15-16	1.5		4.0	5.0	2.5	5.0		4.5	10.0	5.0		3.0		3.5	1.5	6.0							
16-17	1.0		8.0	7.0	1.0	4.0		5.0	5.5		2.5		2.5		5.5		4.0		6.5	8.5			
17-18				9.5	5.5	3.0	1.0	5.0	1.5	6.5	5.0	2.5		8.0		4.5		6.0					9.5
18-19		5.0		11.5	4.5	1.5	1.5	5.5	7.0	2.5	2.5	5.0			4.0	8.5				10.5			
19-20					3.0		2.0	6.0	3.0	8.0	5.0	2.0			8.0	3.5	3.5		2.0	8.0			7.0
20-21				2.5	2.0	5.0	2.5	6.5	9.0	4.0	2.0	4.5		5.5	2.5	7.0		6.0				6.5	
21-22		11.5		5.0		3.5	2.5	6.5	4.5	9.5	4.5	2.0			6.5	2.0	9.5		4.5				
22-23			3.5	7.0	5.5	2.5	3.0	7.0		5.5	2.0	4.5		10.0	1.0	6.0	3.5			8.0			10.0
23-24			7.5	9.0	4.0	1.0	3.5	7.5	6.0	1.0	4.0	1.5		3.5	5.0			5.5	7.0				
24-25			11.0	11.0	3.0	5.5	3.5	8.0	2.0	7.0	1.5	4.0			9.0	4.5	9.0						7.5
25-26					1.5	4.5	4.0		7.5	2.5	4.0	1.5		7.5	3.5	8.5	3.0			8.0			
26-27		9.0		2.5		3.0	4.5		3.5	8.5	1.0	3.5	11.0		7.5	3.0		5.5	2.5				
27-28				4.5	5.0	2.0	5.0		9.0	4.5	3.5	1.0			2.0	7.0	9.0						11.0
28-29				6.5	3.5		5.0	1.0	5.0			3.5		5.5	6.0	1.5	2.5		5.0	8.0			
29-30			2.5	9.0	2.5	5.5	5.5	1.5		6.0	3.0					5.5		5.0					8.0

	AE	BR	CG	DK	KV	V346	V387	V388	V456	V466	V466	V477	V477	V704	W	TT	TY	YY	FZ	Z	RZ	TW	UZ
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DEL	DRA	DRA	DRA	DRA
MAX	11.8	9.4	11	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	10.2	10.8	10	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	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			10.5					8.0												9.0	11.0		
1- 2							10.5							8.5					9.5				
2- 3			8.0																		2.5		
3- 4							8.5										10.5			2.0	5.0		6.5
4- 5									9.5		8.0									10.5	7.5	10.0	
5- 6				11.0					7.0					8.5							10.0		
6- 7				9.5		11.0		8.5		10.0				11.5		9.0							
7- 8			9.5	8.5														10.0		4.0	1.5	5.5	
8- 9							11.5								9.5				10.5		4.0		
9-10			7.0											8.0							6.5		
10-11							10.0							11.5							9.0		
11-12											6.5							9.0		5.5	11.5		
12-13			10.5				8.0	8.5	10.0								11.0		8.5				
13-14				11.0	8.5				7.5	9.0				8.0							3.0		1.5
14-15			8.0	10.0										11.5							5.5		
15-16				8.5							11.0							8.0	12.0	7.5	8.0		
16-17																					10.5		7.5
17-18			11.5			10.5	11.0							8.0									
18-19		11.5						9.0						11.5			10.0				2.0	11.0	
19-20			9.0				9.0												9.5	9.0	4.5		
20-21									10.5	8.0												7.0	
21-22	11.5			11.0			7.0		8.0				7.0	8.0							9.5	6.0	
22-23	10.5	11.5		10.0							10.0			11.0				11.5		2.0			
23-24	10.0			8.5																11.0			
24-25	9.0		10.5					9.5										8.5			3.5	1.5	
25-26	8.5											7.0		7.5							6.0		
26-27	7.5	11.5	8.0				10.0							11.0	11.5		10.5	11.0	4.0	8.5			2.5
27-28										7.0											11.0		
28-29						10.0	8.5		11.0				8.0										
29-30			11.5	11.5					8.5		9.0			7.5		8.0					2.5		8.5

	UZ	AI	YY	YY	RW	AF	SZ	TU	UX	CC	CT	AV	DF	DF	DI	DK	VX	CM	CO	CO	Y	UU	UV
	DRA	DRA	ERI	ERI	GEM	GEM	HER	HER	HER	HER	HER	HYA	HYA	HYA	HYA	HYA	LAC	LAC	LAC	LAC	LEO	LEO	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	11	11	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	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12	11	12.3	9.5	11	11	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												1.5		4.0	4.0								1.5
1- 2							7.5	6.0						3.5									6.5
2- 3									8.0			2.5		3.5			9.5			9.5			
3- 4			1.5			3.5				10.5	10.5		7.0	3.0	6.0	1.5	11.5				7.5	7.5	2.0
4- 5		4.0			5.0							3.5	7.0	3.0		2.5							6.5
5- 6		9.0					10.0		10.5	4.0	5.0		6.5	3.0	2.5	4.0				11.5			
6- 7							5.5					5.0	6.5	2.5		5.0		11.5	6.5				2.0
7- 8					1.5							5.0	6.5	2.5		6.0							6.5
8- 9	4.0			1.0		2.5						6.0	6.0	2.0	4.0							8.5	
9-10													6.0	2.0						8.5			2.0
10-11		4.0					7.5	7.5		9.0		7.5	6.0	2.0								1.0	6.5
11-12	10.0	9.0											5.5	1.5	6.0								
12-13			1.5										8.5	5.5	1.5				10.5				2.0
13-14						2.0						1.0	5.0	1.0	2.0								6.5
14-15							10.0					3.5	5.0	1.0									
15-16							5.5					2.0	5.0			2.0					2.5	2.0	2.0
16-17		4.0							6.5				4.5		4.0	3.0	9.0			6.5			6.5
17-18		8.5		1.0						7.5		3.5	4.5			4.0	10.5						
18-19						1.5							4.0			5.0							2.0
19-20							7.5	9.0	9.0			4.5	4.0		5.5	6.0		7.5		8.5			6.5
20-21													4.0								4.0	2.5	
21-22	5.0		1.5								7.0	6.0	3.5		2.0								2.0
22-23		3.5							11.0				3.5						10.5				6.5
23-24		8.5					9.5					7.0	3.0										
24-25	11.5						5.5			6.0			3.0	7.0	3.5								2.0
25-26													3.0	7.0							5.5	3.5	6.5
26-27				1.0				4.5					2.5	6.5					7.5				
27-28					3.0								2.5	6.5	5.5	2.0		8.0					2.0
28-29		3.5					7.5	10.5			10.5	2.0	2.0	6.0		3.0							6.5
29-30		8.5								11.0			2.0	6.0	1.5	4.0			9.5				

	VZ	RR	SS	DELT	RY	UZ	EW	FL	RU	RW	AT	BB	BO	U	SX	V508	V839	1010	ER	ER	ET	FL	FT	
	LEO	LEP	LIB	LIB	LYN	LYR	LYR	LYR	MON	MON	MON	MON	MON	OPH	OPH	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	
MAX	10.6	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	9.1	10.6	10.6	10.8	5.8	10.5	10.1	8.8	6.2	9.5	9.5	11.2	10.5	9.1	
MIN	11.7	10.9	11.3	5.9	13.3	11	13.6	9.5	11.3	11.9	11.4	11.3	12.1	6.5	11.2	10.7	9.4	7	10.2	10.2	12.4	13.2	9.7	
DUR	4	4	6	7	4	5	5	4	5	5	5	4	5	5	5	3	3	4	3	3	5	3	4	
TOT										1														
									(S)											(S)				
0- 1	6.5											2.0					5.5		1.5					
1- 2									1.0				2.5	8.0				10.0						
2- 3			11.0													5.5	6.5							
3- 4		1.0														6.5		10.0						
4- 5						10.0										7.5	7.5			2.0			4.0	
5- 6			8.0	5.0						4.0					5.5	8.0		9.5						
6- 7					7.0	7.5								9.0			9.0							
7- 8										1.5					7.0			9.0			1.0			
8- 9			5.0				11.5					3.5							2.5					
9-10					3.5										8.5		5.5	8.5						
10-11	2.0						10.0	5.5																
11-12	4.0											2.0		10.0	10.0		6.5	8.5	1.5			2.0		
12-13	6.0			4.5			9.0	9.5			1.5		5.5			5.5								
13-14															11.5	6.5	7.5	8.0						
14-15							7.5				2.0					7.5					2.0			
15-16			9.5													8.0	9.0	7.5		2.0	1.0			
16-17					8.0		6.5				3.0			10.5										
17-18																		7.0						
18-19			6.5				5.0				3.5						5.5			1.5				
19-20				4.0	4.5							3.5						7.0						
20-21											4.5							6.5						
21-22						10.5							3.0	11.5				6.5						
22-23	1.5				1.5							1.5				5.5	7.5		2.0					
23-24	4.0					8.0		7.0								6.5		6.0					1.5	
24-25	6.0															7.5	8.5							
25-26	8.0		11.0			5.5		11.5								8.0		5.5	1.0			1.0		
26-27				3.5	9.0				3.0	3.0								10.0			2.5			5.5
27-28																		5.5						
28-29			8.0	11.5																				
29-30					6.0													6.5		1.5				

	GU	GU	TY	DI	GP	RT	ST	XZ	BETA	UZ	UZ	U	V505	1968	AO	CC	CC	RW	RZ	TY	WY	AC	AM
	ORI	ORI	PEG	PEG	PEG	PER	PER	PER	PER	PUP	PUP	SGE	SGR	SGR	SER	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU
MAX	12.6	12.6	10.5	9.6	10.2	10.6	9.7	10.6	2.2	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	8	10.5	11.5	11.5	10.5	10.4
MIN	13.5	13.5	12.6	10.8	11	12	13.2	12.7	3.5	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12	11.7	12.3	12.3
DUR	4	4	6	2	4	4	5	4	8	4	4	6	5	4	4	4	4	4	3	2	4	6	5
TOT							1					2						1					
		(S)									(S)						(S)						
0- 1								2.0		1.0				7.5			7.0					2.0	
1- 2	4.5													10.5			7.5						
2- 3	3.0																8.5			2.0			
3- 4	1.5					2.5											3.0	9.0					
4- 5															11.5	4.0	10.0		2.0				
5- 6		4.5												9.0	8.5	4.5	11.0						
6- 7		3.0													5.5	5.5	11.5				2.0		
7- 8		1.5								5.0			10.0		3.0	6.0		2.0					
8- 9								3.5				10.0				7.0					4.0		
9-10	4.5					1.5					4.5			7.5		7.5			2.0				
10-11	3.0													10.5		8.5							
11-12	1.5			11.5						4.0						9.0	3.0						
12-13															9.5	10.0	4.0						
13-14		4.5									4.0				6.5	10.5	4.5						
14-15		3.0				3.5								9.0	3.5	11.5	5.5		1.5				
15-16		1.5						1.5		3.5							6.0				2.0		
16-17				11.0				5.0									7.0		3.5	2.0			
17-18	4.5		11.5								3.5						7.5				4.0		
18-19	3.0								2.0					8.0			8.5						
19-20	2.0									3.0				11.0	10.5	3.0	9.0		1.5				2.0
20-21						2.5	2.5						10.0		7.5	3.5	10.0						
21-22		4.5		10.5							2.5				4.5	4.5	10.5		3.0				3.0
22-23		3.0														5.5	11.5						
23-24		2.0						3.0		2.5				9.5		6.0							4.0
24-25																7.0			1.0		2.5		
25-26	4.5				11.5						2.0	7.5				7.5							
26-27	3.0				11.0	1.0									11.0	8.5			3.0		4.5		
27-28	2.0				10.5					2.0				8.0	8.0	9.0	3.0						
28-29					10.0		1.5							11.0	5.5	10.0	3.5						
29-30		4.5			9.0						1.5					10.5	4.5						

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

	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	9.9	10.4	11	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	11.0		9.5					10.5	11.0	
1- 2	6.5				9.5					9.0
2- 3	2.0	10.0								
3- 4									7.0	10.0
4- 5			10.5				10.5		10.5	
5- 6	8.5						9.5			11.5
6- 7	4.0						8.5			
7- 8		8.0					7.0	7.0		
8- 9			11.0					10.5	10.0	
9-10	10.5									
10-11	6.0			8.5						
11-12	2.0									
12-13		6.0							9.5	7.5
13-14			7.5							
14-15	8.0						10.5			9.0
15-16	4.0				8.5		9.5	6.5		
16-17							8.0	10.0	9.5	10.0
17-18			8.0				7.0			
18-19	10.0				11.0					11.0
19-20	6.0									
20-21									9.0	
21-22			9.0							
22-23				10.0						
23-24	8.0									
24-25	3.5						10.5	10.0	8.5	
25-26			9.5			10.5	9.5			7.5
26-27							8.0			
27-28	10.0					9.5	7.0			8.5
28-29	5.5								8.0	
29-30		10.5	10.5		8.0	8.0			11.5	10.0

AAVSO Eclipsing Binary Ephemeris for May 2022

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	RT	TW	UU	WZ	XZ	AB	AD	BD	BX	DS	CX	CZ	XZ	OO	OO	V342	V343	V346	WW	WW	AP	AP	AR
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQL	AQL	AQL	AQL	AQL	AQL	AUR	AUR	AUR	AUR	AUR
MAX	9.3	8.8	11.2	11.6	10	9.3	11.1	11.3	8.6	10.8	10.7	10.3	9.3	9.2	9.2	9	10.6	9	5.7	5.7	10.9	10.9	6
MIN	10.2	11	14.1	12.6	13	10.2	11.6	11.7	9.5	11.4	12	11.2	11.2	10.1	10.1	12.5	12.3	10.4	6.4	6.4	11.4	11.4	6.7
DUR	3	11	8	4	3	3	4	3	4	4	3	3	7	3	3	7	4	4	5	5	4	4	5
TOT		2														3							
															(S)				(S)		(S)	(S)	(S)
0- 1	11.0				11.0			8.0						6.5				10.5	3.5				
1- 2								6.0						7.0								4.0	
2- 3	8.0													7.0									
3- 4														7.5									
4- 5	5.5										10.0			8.0			8.5				3.5		
5- 6				10.0				10.0					10.0	8.0									3.5
6- 7								8.5	10.5					8.5									
7- 8	9.0							6.5						9.0		8.5					3.5		
8- 9			11.0											9.0									
9-10	6.5										10.0			9.5									3.0
10-11														10.0									
11-12			10.5					10.5				11.0		10.0								3.0	
12-13	9.5			9.0				9.0						10.5									
13-14								7.0						11.0									3.0
14-15	7.0		9.5								10.0			11.0			10.0						
15-16					9.5		11.0								5.5							2.5	
16-17							10.5								5.5		6.5						
17-18	10.5		9.0				10.0	11.0	10.0					6.0									2.5
18-19							10.0	9.5						6.5									
19-20	8.0				11.0	8.0	9.5	7.5			10.5			6.5				6.0	2.0	2.5			
20-21						8.0	9.0	5.5					9.0	7.0				8.5					
21-22			10.0			7.5	9.0							7.5			11.0					2.0	
22-23						7.5	8.5							7.5									2.5
23-24						7.5	8.0							8.0								2.0	
24-25	8.5	10.0				7.5	8.0	9.5			10.5			8.5	7.5				3.0	5.5			
25-26						7.5	7.5	8.0						8.5									2.0
26-27	6.0					7.0	7.0	6.0		9.5				9.0									5.0
27-28						7.0	7.0			10.0				9.5		8.0					1.5		
28-29			9.0			7.0	6.5		9.5	10.0				9.5							5.0		
29-30	9.5					7.0	6.0			10.5	10.5			10.0									1.5
30-31								10.0		10.5		10.5		10.0				7.5					5.0

AAVSO Eclipsing Binary Ephemeris for May 2022

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	CL	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	R	XZ	AK	RW	TY	RZ	TV	AB
	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA	CMI	CMI	CAP	CAP	CAS	CAS	CAS
MAX	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	9.7	10.1	9.8	10.5	6.4	7.3	10.2
MIN	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	10.2	11.5	10.8	11.6	7.8	8.4	12.2
DUR	4	3	3	3	3	3	3	3	3	3	6	3	5	5	5	4	3	4	5	4	4	4	4
TOT					(S)	(S)		(S)		(S)					(S)								
0- 1						5.0	4.5			4.5		2.5	8.5	5.0							6.5		6.0
1- 2						4.5	3.5	7.5	5.5	2.0		6.5			8.5		2.5				11.0		
2- 3	3.0					4.0	2.5	6.0	3.0	6.5					3.0								
3- 4					7.0	3.5		5.0	4.0			1.5		6.5				10.5					
4- 5					6.5	2.5		4.0	5.0			6.0	8.5		10.0							11.0	8.5
5- 6					6.0	2.0	6.5	2.5	2.5	6.0		10.5			4.0		4.0	3.5					
6- 7					5.0		5.5	1.5	7.0	3.0				7.5							5.5	6.5	
7- 8	2.5				4.5		4.0		4.0			5.0		2.0							10.5		2.0
8- 9					4.0		3.0	7.0	1.5	5.0	6.0	9.5	8.0		5.5		1.5						11.0
9-10		3.0			3.5	7.0	2.0	5.5	6.0	2.5				9.0				2.5		9.5			
10-11					2.5	6.5		4.5	3.5	7.0		4.0		3.5									
11-12					2.0	6.0	7.0	3.5		4.5		8.5		7.0									4.5
12-13	2.0	2.0				5.0	6.0	2.0	5.5	2.0			7.5	10.5			2.5				5.0		
13-14						4.5	5.0		3.0	6.5		3.5		4.5				1.5			10.0		
14-15						4.0	3.5	7.5		4.0		8.0			8.0								
15-16					7.0	3.5	2.5	6.5	5.0						2.5	2.0						8.0	7.0
16-17					6.5	2.5		5.0	2.0	5.5		2.5	7.0	6.0			4.0						
17-18					6.0	2.0		4.0	6.5	3.0		7.0			9.5								
18-19					5.0		6.5	3.0	4.0		4.0				4.0			4.0			4.5		
19-20					4.5		5.5	1.5	1.5	5.0		2.0		7.5			1.5			8.5	9.5		9.5
20-21			3.0		4.0	8.0	4.5		6.0	2.5		6.0	7.0	2.0	11.0				9.5				
21-22					3.0	7.0	3.0	7.0	3.5	7.0	11.0	10.5			5.5								
22-23		3.0			2.5	6.5	2.0	5.5		4.5				9.0				3.0					3.0
23-24					2.0	6.0		4.5	5.5	2.0		5.5		3.0			2.5						
24-25						5.0	7.0	3.5	2.5	6.5		10.0	6.5		6.5						4.0	9.5	
25-26		2.0		2.5		4.5	6.0	2.0		3.5				10.0							8.5		
26-27					8.0	4.0	5.0		4.5			4.5		4.5				2.0				5.0	5.5
27-28					7.0	3.0	3.5	7.5	2.0	5.5		9.0			8.0		4.0						
28-29					6.5	2.5	2.5	6.5	6.5	3.0	2.0		6.0		2.5								
29-30					6.0	2.0	1.5	5.0	4.0			3.5		6.0						7.5			
30-31			2.0		5.0			4.0		5.0		8.0			9.5						3.5		8.0

	CW	CW	DZ	IR	IS	MM	OR	PV	PV	V364	V364	V375	U	SU	WZ	WZ	XX	DK	DL	DV	EG	RW	RW
	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	COM	COM
MAX	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10	10	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	11
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	7.0	3.0			8.5		6.5							6.0	6.0		1.5			6.5	11.0		4.0
1- 2	6.0	2.0		7.5								9.5		3.5	2.0	7.0			6.0	10.5			3.0
2- 3	5.0		8.0		4.5	8.0				8.5					8.0	3.0	9.5				2.0	4.5	1.5
3- 4	4.0	7.5		8.5											4.0	9.0					4.5	3.5	
4- 5	2.5	6.5						8.5				8.0	1.5			5.5					6.5	2.0	5.0
5- 6	1.5	5.5		9.5			6.5		6.0	10.5					6.5						8.5		3.5
6- 7		4.5	6.5												2.5	7.5			3.5	2.0	11.0	5.5	2.5
7- 8	7.5	3.5		10.5								7.0		11.0	8.5	3.5	2.0			6.0		4.0	
8- 9	6.0	2.5												8.5	4.5	9.5				10.0	2.0	3.0	
9-10	5.0		9.5			7.0								6.5		5.5	10.0		10.0		4.0	1.5	4.5
10-11	4.0					11.0	6.0					5.5		4.0	6.5	1.5					6.5		3.5
11-12	3.0	7.0			9.5			8.5							2.5	7.5					8.5	5.0	2.0
12-13	2.0	6.0							6.0		9.5				8.5	3.5					10.5	3.5	
13-14		5.0	8.0		6.0							4.5			4.5	9.5					1.5	2.5	5.5
14-15	7.5	4.0		6.0												5.5	2.0		7.0	5.5	2.0		4.0
15-16	6.5	2.5					5.5								6.5	1.5				9.0	4.0		3.0
16-17	5.5	1.5		7.0								3.0			3.0	8.0	10.0				6.0	4.5	1.5
17-18	4.5		6.0			9.5								9.0	9.0	4.0					8.0	3.5	
18-19	3.5	7.5		8.0				8.5						6.5	5.0	10.0					10.5	2.0	5.0
19-20	2.5	6.0							6.0	8.0		1.5		4.0		6.0			4.5				4.0
20-21		5.0	9.5	9.0			5.0								7.0	2.0					1.5	5.5	2.5
21-22		4.0					11.0								3.0	8.0	2.5				4.5	3.5	4.0
22-23	7.0	3.0		10.0	11.0					10.0					9.0	4.0			11.0	8.5	6.0	3.0	
23-24	6.0	2.0													5.0		10.5				8.0	2.0	4.5
24-25	5.0		7.5	11.0	7.0	8.5										6.0					10.0		3.5
25-26	4.0	7.5						8.5							7.0	2.0						5.0	2.0
26-27	3.0	6.5					10.5		6.5			10.5		9.5	3.0	8.0						4.0	
27-28	1.5	5.5	11.0											7.0	9.5	4.5		11.0	8.5		3.5	2.5	5.5
28-29		4.5	6.0											4.5	5.5		2.5	10.5		4.0	5.5	1.5	4.0
29-30	7.5	3.5		5.5						8.5	9.5					6.5		10.5		8.0	8.0		3.0
30-31	6.0	2.5													7.5	2.5	11.0	10.0			10.0	4.5	2.0

	RZ	RZ	SS	SS	CC	CC	U	RW	W	W	RV	RV	V	Y	SW	WW	ZZ	AE	BR	CG	DK	KV	V346
	COM	COM	COM	COM	COM	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG
MAX	10	10	10.9	10.9	11	11	7.6	10.1	10.6	10.6	9	9	9.5	7	9.3	9.9	10.7	11.8	9.4	11	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	10	10.2	7.6	11.8	13.2	12	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	6.0	2.0	6.5	1.5		3.0		10.0	4.5							5.5					10.0	9.5	
1- 2	6.5	2.5	2.5	7.5	3.0			3.0		4.0	2.5			8.0			5.5			9.0	8.5		
2- 3	6.5	2.5	8.0	3.0		2.5			3.5		4.5				3.5						7.0		
3- 4	7.0	3.0	4.0	9.0	2.5	5.0	9.0	7.5	7.0	2.5			3.0						3.5	6.5	5.5	5.5	
4- 5	7.5	3.5	9.5	4.5	5.0	2.5			2.0	6.5	2.0			8.0			9.0						
5- 6	8.0	4.0	5.5		2.0	5.0			6.0		4.5	5.5											
6- 7		4.0		6.0	4.5	2.0		5.0		5.0							6.0			10.0			
7- 8		4.5	7.0	2.0	2.0	4.5			4.5		2.0			7.5				3.5					
8- 9		5.0	3.0	8.0	4.5	1.5		9.5		3.5		4.0					3.5			7.5	10.0		
9-10		5.5	8.5	3.5	1.5	4.0		3.0	3.0								9.5				8.5		9.0
10-11	1.5	5.5	4.5	9.5	4.0	1.5	6.5		7.0	2.0	1.5		3.5	7.5		4.5				5.0	7.0		
11-12	2.0	6.0		5.0		4.0		7.5	1.5	6.0		4.0			7.0		7.0		3.5		5.5		
12-13	2.5	6.5	6.0		3.5				5.5				6.0										
13-14	2.5	7.0	1.5	6.5		3.5				4.5	1.5			7.5			4.0			8.5			
14-15	3.0	7.0	7.5	2.5	3.5			5.0	4.0			3.5				10.5							
15-16	3.5	7.5	3.0	8.0		3.0				3.5	7.0								3.5	6.0			
16-17	4.0	8.0	9.0	4.0	3.0			9.5	2.5	7.0				7.5			7.5				10.0		
17-18	4.0		5.0	9.5		3.0	4.0	2.5	6.5	2.0		3.5	4.0								8.5	10.5	
18-19	4.5			5.5	2.5					6.0	7.0						5.0			10.0	7.0		
19-20	5.0		6.5		5.0	2.5		7.0	5.0					7.5			11.0		3.5		5.5		
20-21	5.5		2.0	7.0	2.5	5.0				4.5		3.0			10.5	3.5				7.5		6.5	8.5
21-22	5.5	1.5	8.0	3.0	5.0	2.0			3.5		6.5						8.0						
22-23	6.0	2.0	3.5	8.5	2.0	4.5		5.0		3.0		2.0	7.5								5.0		
23-24	6.5	2.5	9.5	4.5	4.5	2.0			2.0	7.0		3.0				11.0	5.5	11.0	3.0	11.0			
24-25	7.0	2.5	5.0		1.5	4.5	2.0	9.0	6.0	1.5	6.5		4.5					10.5			10.0		
25-26	7.0	3.0		6.0	4.0	1.5		2.5		5.5				7.0				9.5		8.5	8.5		
26-27	7.5	3.5	6.5	2.0	1.5	4.0			4.5			2.5					9.0	9.0			7.0		
27-28	8.0	4.0	2.5	7.5	4.0			7.0		4.0	6.0							8.0	3.0	6.0	6.0		
28-29		4.0	8.5	3.5		3.5			3.5					7.0			6.0	7.5	11.0				
29-30		4.5	4.0	9.0	3.5			11.0	7.0	2.5		2.5	2.5					6.5					
30-31		5.0	10.0	5.0		3.5		4.5	2.0	6.5	6.0						3.5	6.0		9.5			

	V387	V388	V456	V466	V466	V477	V477	V704	W	TT	TY	YY	FZ	Z	RZ	TW	UZ	UZ	AI	AF	SZ	TU	UX
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DEL	DRA	DRA	DRA	DRA	DRA	DRA	GEM	HER	HER	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	10.2	10.8	10	7.8	9.9	9.9	7.2	10.2	10.2	10.6	8.9
MIN	12.3	10.3	11.9	11.6	11.6	9.2	8.7	14.6	12.7	12.5	10.8	12	11.3	13.6	10.9	9.5	10.7	10.7	8.2	11.3	12	13.4	9.8
DUR	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	4	5	5
TOT									2							1						1	
					(S)		(S)											(S)					
0- 1	6.5	9.5	6.0					11.0			7.5	10.0	9.0	5.5	5.0								5.0
1- 2		6.5		11.0											7.5								
2- 3						8.0			10.5						10.0						9.5		
3- 4								7.5													5.5		7.5
4- 5				6.0				11.0			9.0	7.0	7.5	1.5			6.0	3.5					
5- 6	9.5					9.0								4.0	7.0			8.0				6.0	
6- 7		10.0			8.0						6.5												10.0
7- 8	7.5	6.5	9.0					7.5	5.5				10.0		8.5							7.5	
8- 9			6.5	10.0				10.5					8.0		9.0	2.5						3.0	
9-10	5.5					9.0											3.5						
10-11															3.0				3.5				
11-12				5.0				7.0					8.0	2.5	5.5				8.0			9.5	
12-13	10.5	10.5					10.0	10.5				7.5		11.0	7.5	10.0						5.5	
13-14		7.0			7.0						10.0				10.0								
14-15	8.5																					7.5	3.5
15-16			9.5	9.0				7.0						4.0	2.0								
16-17	7.0		7.0			10.0		10.5			6.5				4.5				3.0		7.5		
17-18			4.0		11.0										6.5		7.0	8.0			3.0		6.0
18-19		10.5											9.0		9.0								
19-20		7.0				11.0	7.0		10.5	9.0	10.5			6.0		7.5				3.5			
20-21					6.0			10.5				6.0										9.5	8.5
21-22	10.0														3.5						5.5	2.5	
22-23				8.0					7.5			7.0			5.5	3.0	4.5		3.0				
23-24	8.0		10.0			11.0		7.0			10.0			7.5	8.0			8.0				9.0	10.5
24-25		11.0	7.5		10.0			10.5							10.5					3.0			
25-26	6.0	7.5	4.5							8.0		10.5				11.0						7.5	
26-27									11.0						2.5							3.0	
27-28					5.0			6.5			9.0			9.5	4.5		2.0						
28-29	11.0							10.0											3.0				
29-30				7.0									8.5		9.5				7.5	2.5	9.5		
30-31	9.0													2.5			8.5				5.5	4.5	

	CC	CT	AV	DF	DF	DI	DK	SW	SW	VX	CM	CO	CO	Y	UU	UV	VZ	T	SS	DELT	RY	UZ	EW
	HER	HER	HYA	HYA	HYA	HYA	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LMI	LIB	LIB	LYN	LYR	LYR
MAX	9.5	9.9	10.2	11	11	11	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	11.2
MIN	12.8	11.2	10.6	11.5	11.5	12	11	10	10	12.3	9.5	11	11	12.7	12.7	10.2	11.7	12.6	11.3	5.9	13.3	11	13.6
DUR	4	4	4	4	4	4	4	3	3	4	4	5	5	5	4	3	4	6	6	7	4	5	5
TOT					(S)				(S)			(S)											
0- 1		5.5	3.0	2.0					7.5	8.0				7.0	4.5	2.0							
1- 2	4.5			1.5						10.0						6.5		5.0					
2- 3			4.0	1.5		3.5															2.5		
3- 4												5.5				2.0			3.0				
4- 5			5.5		5.0			7.5								6.5	1.5						
5- 6					5.0			6.5			8.5				5.5		3.5						
6- 7	9.5				4.5							7.5				2.0	5.5						
7- 8		9.0			4.5	1.5										6.5							
8- 9	3.0				4.0													9.5				11.0	
9-10		3.5			4.0		2.0		7.0				9.5			2.0					7.0		
10-11					4.0	3.0	3.0				4.5					6.5				2.5		8.5	
11-12			1.5		3.5		4.0												6.5				
12-13					3.5									2.0		2.0				10.5	4.0	6.0	
13-14	8.0		2.5		3.5			7.0			9.0	6.5				6.5							
14-15					3.0					7.5									4.0			3.0	
15-16			4.0		3.0					9.0						2.0							
16-17		7.0			2.5					11.0		9.0				6.5							
17-18			5.0		2.5				7.5					3.5			3.5			2.0			11.0
18-19		2.0			2.5	3.0										2.0	5.5						
19-20					2.0						11.0					6.5				10.0			9.5
20-21	6.0				2.0							4.5											
21-22					1.5		2.0	7.5			9.5					2.0			8.5				8.5
22-23					1.5		3.0	6.5						5.0		6.5					5.0		
23-24		10.5					4.0						7.0					1.5					7.0
24-25				5.0												2.0			5.5	2.0			
25-26	11.0	5.5		5.0												6.5					1.5		6.0
26-27			2.5	4.5		3.0			7.0		5.0		9.0					2.0		9.5			
27-28	4.5			4.5										6.0	1.5	2.0						9.0	4.5
28-29			3.5	4.5						6.5						6.5							
29-30				4.0						8.5	10.0		11.0					3.0	2.5			6.5	3.5
30-31			4.5	4.0				7.0		10.0		6.0				2.0	5.0						

	Y	UZ	UZ	U	V505	1968	AO	CC	CC	RZ	WY	V	X	W	W	TY	TY	UX	VV	XZ	ZZ	RU	VV
	PSC	PUP	PUP	SGE	SGR	SGR	SER	SER	SER	TAU	TAU	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR
MAX	9	9.7	9.7	6.4	6.4	12.3	10.6	11.1	11.1	10.5	11.5	10.9	8.9	9.1	9.1	11.7	11.7	12.7	10.1	10.1	9.8	10.7	11.7
MIN	12	10.6	10.3	9.1	7.6	13.3	12.1	11.7	11.7	11.2	11.7	11.9	12	9.9	9.9	12.4	12.4	13.8	11	11.7	11.2	11.4	13.5
DUR	7	4	4	6	5	4	4	4	4	3	4	4	4	3	3	3	3	1	3	3	4	4	4
TOT				2																			
			(S)						(S)						(S)		(S)						
0- 1									5.0					3.5	7.5		5.5			1.5			4.5
1- 2						7.0			6.0			10.0		3.5	7.5	2.5	7.0	5.0	4.5	7.0			2.0
2- 3						10.0			7.0					3.5	7.5	4.5		9.5			8.0	2.5	
3- 4					10.5				7.5		2.5			3.5	7.5	6.0	1.5	4.5	6.0			3.5	7.5
4- 5							9.0	2.0	8.5					3.5	7.5	7.5	3.0	8.5				4.5	4.5
5- 6				11.0		5.5	6.0	3.0	9.0					3.5	7.5		4.5	3.5	7.5			6.0	2.0
6- 7						8.5	3.5	3.5	10.0					3.5	7.5	2.0	6.0	8.0		4.5		7.0	
7- 8	9.0								4.5	10.5				3.5	7.5	3.5	7.5	2.5	9.0			8.5	7.5
8- 9									5.0			11.0		3.5	7.5	5.0		7.0	1.5			9.5	5.0
9-10					8.5				6.0					3.5	7.5	6.5	2.0	2.0				5.5	10.5
10-11						7.0			6.5					3.5	7.5	8.0	3.5	6.0	3.0				
11-12						10.0	10.0	7.5						3.5	7.5		5.5			1.5			8.0
12-13				5.5			7.0	8.5	2.0		2.5			3.5	7.5	2.5	7.0	5.5	4.5	7.0		1.5	5.5
13-14							4.0	9.0	3.0					3.5	7.5	4.0	8.5					3.0	3.0
14-15						5.5		10.0	3.5					3.5	7.5	5.5		4.5	6.0			4.0	
15-16						8.5		10.5	4.5					3.5	7.5	7.0	3.0	9.0				5.5	8.5
16-17				10.5					5.0					3.5	7.5		4.5	4.0	7.5		3.0	6.5	6.0
17-18									6.0					3.5	7.5	1.5	6.0	8.0		4.5		7.5	3.0
18-19							10.5		6.5					4.0	8.0	3.0	7.5	3.0	9.0		10.5	9.0	
19-20						7.5	8.0		7.5					4.0	8.0	4.5		7.5	1.5			10.0	9.0
20-21						10.5	5.0	2.0	8.5					4.0	8.0	6.0	2.0	2.0					6.0
21-22							2.0	3.0	9.0	1.5	3.0			4.0	8.0	8.0	3.5	6.5	3.0				3.5
22-23	10.5		2.5	9.0	8.5			3.5	10.0					4.0	8.0		5.0	1.5		1.5			
23-24						6.0		4.5	10.5					4.0	8.0	2.5	6.5	5.5	4.5	7.0		2.0	9.0
24-25		2.5				9.0		5.0						4.0	8.0	4.0	8.0					3.5	6.5
25-26								6.0						4.0	8.0	5.5		5.0	6.0		8.0	4.5	4.0
26-27			2.0				8.5	6.5				10.0		4.0	8.0	7.0	2.5	9.5				6.0	1.5
27-28							6.0	7.5				10.5		4.0	8.0	8.5	4.0	4.0	7.5			7.0	9.5
28-29		1.5			6.5	7.5	3.0	8.0	2.0					4.0	8.0	1.5	5.5	8.5		4.5		8.0	7.0
29-30				11.0	10.5			9.0	3.0					4.0	8.0	3.0	7.0	3.5	9.0			9.5	4.5
30-31			1.5					10.0	3.5		3.0			4.0		4.5		7.5				10.5	1.5

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

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	RT	TW	WZ	XZ	AB	AB	AD	AD	BD	BX	RY	CX	CZ	XZ	OO	OO	V342	V343	V346	SS	SS	AP	AP	
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQR	AQL	AQL	AQL	AQL	AQL	AQL	ARI	ARI	AUR	AUR	
MAX	9.3	8.8	11.6	10	9.3	9.3	11.1	11.1	11.3	8.6	8.8	10.7	10.3	9.3	9.2	9.2	9	10.6	9	10.1	10.1	10.9	10.9	
MIN	10.2	11	12.6	13	10.2	10.2	11.6	11.6	11.7	9.5	10.1	12	11.2	11.2	10.1	10.1	12.5	12.3	10.4	11.1	11.1	11.4	11.4	
DUR	3	11	4	3	3	3	4	4	3	4	5	3	3	7	3	3	7	4	4	3	3	4	4	
TOT		2															3							
						(S)		(S)								(S)					(S)		(S)	
0- 1	6.5				6.5		5.5		8.5	11.0					4.5	10.5		10.0						
1- 2					6.5		5.0		6.5						5.0	11.0								
2- 3	4.0				6.5		5.0		5.0			8.0		5.0	5.0									
3- 4	10.0			9.5	6.5		4.5					10.5			5.5									
4- 5			8.0		6.5		4.0							8.5	6.0									
5- 6	7.5				6.0				10.5	8.0					6.0					8.5				
6- 7			10.0		6.0				9.0				8.0		6.5						9.0			
7- 8	4.5				6.0				7.0		11.0	8.0			7.0			9.5		9.0				
8- 9	11.0				6.0				5.0	9.0		10.5			7.0						9.5			
9-10					6.0				3.5		10.0				7.5			6.0						
10-11	8.0				5.5										7.5		6.5							
11-12			7.0		5.5					10.5	9.5				8.0									
12-13	5.5				5.5				9.0			8.0	9.0		8.5									
13-14			9.0		5.5				7.5		8.5	10.5			8.5									
14-15					5.0				5.5						9.0									
15-16	9.0				5.0				4.0		7.5				9.5	3.5								
16-17					5.0					7.5					9.5	3.5								
17-18	6.0				5.0						7.0	8.0		4.5	10.0	4.0						3.5		
18-19				8.0	5.0				9.5			11.0	10.0		10.5	4.5								
19-20	3.5								8.0	8.5	6.0			8.0	10.5	4.5			5.5		8.5		3.0	
20-21	9.5		8.0				11.0		6.0						5.0	10.5	7.5	8.0	9.0					
21-22							10.5		4.5						5.0			10.5		9.5	3.0			
22-23	7.0	6.5	10.0	9.5			10.0			10.0		8.0			5.5		3.5		9.5					
23-24							10.0					11.0			6.0								3.0	
24-25	4.0						9.5	10.0					11.0		6.0									
25-26	10.5						9.0	8.5							6.5							2.5		
26-27		9.5					9.0	6.5							7.0									
27-28	7.5		7.0		8.0		8.5	4.5			8.5				7.0	5.5							2.5	
28-29					8.0		8.0								7.5									
29-30	5.0		9.0		7.5		8.0								8.0			4.5				2.0		

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	TU	TU	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	AK	RW	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	
	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	
MAX	11.7	11.7	11.8	11.8	10.6	10.6	10.6	8.6	10.5	11.6	11.6	10.1	9.8	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	
MIN	12.7	12.7	12.3	12.3	11.1	11.1	12.4	9.4	11.3	11.8	11.8	11.5	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	
DUR	3	3	3	3	3	3	6	3	5	5	5	4	5	4	4	4	4	3	3	4	4	5	5	
TOT		(S)		(S)		(S)					(S)								(S)					
0- 1	4.5		6.5	3.0	6.0	2.5	9.0				3.5				8.0			5.0		9.0	6.5		7.5	
1- 2	4.0	7.5	5.5		3.5	7.0		3.0	6.0	7.0								4.0		4.0				
2- 3	3.0	7.0	4.5			4.0		7.5			11.0							3.0	7.0		7.5			
3- 4	2.5	6.5	3.0	7.0	5.0						5.0						10.5	2.0	6.0					
4- 5	2.0	6.0	2.0	6.0	2.5	6.0		2.0		8.5						6.5			5.0	7.5	8.5	8.5		
5- 6		5.0		4.5	7.0	3.5		6.5	5.5	3.0				10.5	3.0			7.5	4.0					
6- 7		4.5	7.5	3.5	4.5						6.5		8.5		7.5		4.0	6.5	3.0		9.5	4.5		
7- 8	7.5	4.0	6.0	2.5	2.0	5.5				10.0								5.5		10.5			6.0	
8- 9	7.0	3.0	5.0		6.5	3.0		5.5		4.5				7.0				4.5		5.5	10.5		10.0	
9-10	6.5	2.5	4.0	7.5	4.0			10.0	5.0		8.0							3.5	7.5					
10-11	6.0	2.0	2.5	6.5		5.0	7.0				2.0							6.5	2.5	6.0				
11-12	5.0			5.5	6.0	2.0		5.0		5.5					2.5					5.0	9.0	3.5		
12-13	4.5			4.0	3.0	6.5		9.5			9.0				7.0					4.0	3.5			
13-14	4.0	7.5	6.5	3.0		4.0			4.5		3.5					8.0		7.0	3.0		4.5			
14-15	3.0	7.0	5.5	2.0	5.0			4.0		7.0								8.5	6.0	2.0			5.0	
15-16	2.5	6.5	4.5		2.5	6.0		8.5			10.5			9.5		3.5			5.0		7.0	5.5	9.5	9.0
16-17	2.0	6.0	3.0	7.0	7.0	3.5					5.0								4.0	7.5				
17-18		5.0	2.0	6.0	4.5			3.0	4.5	8.5								2.5	3.0	6.5		6.5	5.5	
18-19		4.5		4.5	2.0	5.5		7.5		2.5				6.0	6.5				1.5	5.5	10.5			
19-20	7.5	4.0	7.5	3.5	6.5	3.0					6.0									4.5	5.5	7.5	2.0	
20-21	7.0	3.0	6.0	2.5	3.5		5.0	2.5		10.0										7.5	3.5			
21-22	6.5	2.5	5.0			4.5		7.0	4.0	4.0								5.0	6.5	2.5		8.5		
22-23	5.5	2.0	4.0		5.5	2.0					7.5					9.5			5.0		8.5		7.5	
23-24	5.0		2.5	6.5	3.0	6.5					2.0		8.0						4.0		3.5	9.5		
24-25	4.5			5.5	4.0			6.0		5.5					6.0	5.0			3.0	7.0				
25-26	4.0	7.5		4.0	5.0			10.5	3.5		9.0	2.0		9.0	10.5		7.0	2.0	6.0		10.5			
26-27	3.0	7.0	7.0	3.0	2.5	6.0					3.5									5.0	7.0	3.0	10.5	
27-28	2.5	6.5	5.5	2.0	7.0	3.5		5.0		7.0										4.0				
28-29	2.0	5.5	4.5		4.5			9.5			10.5			5.0					6.5	3.0		4.0	7.0	
29-30		5.0	3.5	7.0		5.0			3.0		4.5							9.5	5.5	1.5	10.0		6.5	

	OR	PV	PV	V364	V364	V375	U	SU	WZ	WZ	XX	DK	DL	DV	EG	SS	RW	RW	RZ	RZ	SS	SS	CC
	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CET	COM	COM	COM	COM	COM	COM	COM
MAX	11.4	10	10	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	9.4	11	11	10	10	10.9	10.9	11
MIN	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	13	11.6	11.6	10.7	10.7	11.5	11.5	11.9
DUR	4	3	3	4	4	5	4	4	3	3	4	4	5	4	3	5	3	3	3	3	4	4	2
TOT							2									2							
			(S)		(S)					(S)								(S)		(S)		(S)	
0- 1	10.0									3.5	8.5		9.5				3.5			5.5	5.5		3.0
1- 2		8.5			10.5	8.0				9.5	4.5		9.5	5.5			2.0	5.0		5.5		6.5	
2- 3			6.5							5.5			9.0		3.5			4.0	2.0	6.0	7.0	2.0	3.0
3- 4		2.5									6.5		8.5		5.5		5.5	2.5	2.5	6.5	3.0		
4- 5	4.0					6.5		9.5	7.5	2.5	3.0	8.0		3.0	7.5		4.5		3.0	7.0		4.0	2.5
5- 6	9.5			7.5				7.5	3.5	8.5		8.0		7.0	9.5		3.0		3.0	7.0	4.5		5.0
6- 7								5.0	9.5	4.5		7.5	3.0				2.0	4.5	3.5	7.5		5.5	2.0
7- 8						5.5		2.5	6.0			7.0						3.5	4.0		6.0		4.5
8- 9		8.5		9.5						2.0	7.0		7.0		3.0		5.0	2.5	4.5		2.0	7.0	2.0
9-10	3.5		6.5							8.0	3.0		6.5	9.5			4.0		4.5		7.5	2.5	4.5
10-11	9.5	2.5				4.0				4.0	9.0		6.0				2.5	5.5	5.0		3.5		
11-12									10.0	5.0	3.5	6.0		2.5	9.5			4.5	5.5			4.0	4.0
12-13				6.0						6.0								3.0	6.0		5.0		
13-14					3.0		10.0	2.0	7.0		5.0		10.5				5.0	2.0	6.0	2.0		5.5	3.5
14-15	3.0							7.5	8.0	3.0		5.0	6.5		3.0		3.5		6.5	2.5	6.5		
15-16	9.0	8.5			8.0		11.0	5.0	4.0	9.0		4.5			5.0		2.5	5.0	7.0	3.0	2.5	7.5	3.5
16-17			6.5					3.0		5.0		4.0			7.0			4.0	7.0	3.0		3.0	
17-18		2.5								6.0		4.0			9.0		5.5	2.5	7.5	3.5	4.0		3.0
18-19				10.0						2.0	7.0	3.5	3.5		2.0		4.5			4.0		4.5	
19-20										8.5	3.5		3.0	4.0	6.0		3.0			4.5	5.5		2.5
20-21	8.5						10.5			4.5	9.5		3.0		9.5	2.5	2.0	5.0		4.5		6.0	5.0
21-22										5.5			2.5		4.5			3.5		5.0	7.0	2.0	2.5
22-23		8.5		6.5				10.5	6.5			2.0	10.5		7.0		5.0	2.5		5.5	3.0	7.5	5.0
23-24			6.5			10.5		8.0	2.5	7.5		2.0			9.0		4.0			6.0		3.5	2.0
24-25		2.5						5.5	8.5	3.5							3.0	5.5	2.0	6.0	4.5		4.5
25-26	8.0			8.5			10.0	3.0	4.5	9.5	4.0							4.5	2.5	6.5		5.0	
26-27						9.0				5.5				5.0	2.5			3.0	3.0	7.0	6.0		4.0
27-28									6.5				8.0	9.0	4.5		5.0	2.0	3.0	7.5		6.5	
28-29				11.0					2.5	7.5					6.5	11.0	3.5		3.5	7.5	7.5	2.5	4.0
29-30		8.5				8.0			8.5	3.5					9.0		2.5	5.0	4.0		3.0		

	CC	U	RW	W	W	RV	RV	V	Y	SW	WW	ZZ	AE	BR	CG	DK	KV	V346	V387	V388	V456	V466	V466
	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG
MAX	11	7.6	10.1	10.6	10.6	9	9	9.5	7	9.3	9.9	10.7	11.8	9.4	11	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	10	10.2	7.6	11.8	13.2	12	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									7.0			9.5	5.0	3.0			8.0		8.0	10.5			9.0
1- 2	3.0		9.0		5.0		2.0						4.5		7.0	10.0		7.0	4.5	8.0			
2- 3			2.5	4.5							10.0	7.0	3.5			8.5				5.0			
3- 4	2.5	10.5			3.5				7.0	4.0					4.5	7.0		5.5		2.5		4.0	
4- 5	5.0		6.5	3.0			2.0					4.0		3.0	11.0	6.0							
5- 6	2.5				2.0	5.5		3.0				10.5				4.5						6.0	
6- 7	5.0		11.0						7.0						8.5		7.5		10.0	8.0			
7- 8	2.0		4.5									7.5								5.0			8.0
8- 9	4.5				5.0	5.0								3.0	6.0				8.0		11.0		
9-10			8.5	4.0					6.5			5.0				10.0	3.5			8.5	10.0		
10-11	4.0	8.0	2.0		3.5										3.0	8.5			6.5		5.5		3.0
11-12				2.5		5.0						2.0			9.5	7.5		7.5			3.0		
12-13	4.0		6.5		2.0			3.5	6.5	7.5	9.0	8.5		3.0		6.0			4.5	8.5		5.0	
13-14															7.0	4.5				5.0			
14-15	3.5		10.5	5.0		4.5						5.5											7.0
15-16			4.0		4.5				6.5						4.5				9.5				
16-17	3.0			3.5								3.0		3.0	10.5							9.0	
17-18		6.0	8.5		3.0	4.5						9.0		11.0		10.0			7.5		9.0		2.0
18-19	3.0		2.0	2.5					6.5						8.0	8.5				9.0	6.0		
19-20								4.0				6.0				7.5			5.5	5.5	3.5	4.0	
20-21	2.5		6.0			4.0								3.0	5.5	6.0							
21-22	5.0			5.0					6.5	11.0		3.5		11.0		4.5				3.5			6.0
22-23	2.0		10.5		4.0						7.5	9.5			3.0			6.5	10.5				
23-24	4.5		4.0	3.5		4.0									9.5		8.0					8.0	
24-25	2.0	3.5			2.5				6.5			7.0	10.5	3.0					8.5	9.0			
25-26	4.5		8.0	2.0									10.0	11.0	7.0	10.0				5.5	9.5		10.0
26-27						3.5		4.0				4.0	9.0			9.0	4.0		6.5		6.5	3.0	
27-28	4.0				5.0				6.0			10.5	8.5		4.0	7.5					4.0		
28-29			6.0	4.5									7.5	3.0	10.5	6.0			5.0				5.0
29-30	3.5				3.5	3.0						7.5	7.0	10.5		4.5							

AAVSO Eclipsing Binary Ephemeris for June 2022

all times in U.T.

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	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	SZ HER	TU HER	UX HER	CC HER	CT HER	AV HYA	DF HYA	DF HYA	DI HYA
MAX	8.3	8.3	13.8	9.4	10.6	9.6	11	10.2	10.8	10	7.8	9.9	9.9	7.2	10.2	10.6	8.9	9.5	9.9	10.2	11	11	11
MIN	9.2	8.7	14.6	12.7	12.5	10.8	12	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12
DUR	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	5	5	4	4	4	4	4	4
TOT				2							1					1							
		(S)										(S)										(S)	
0- 1		4.5	6.5	6.5		7.0	8.0										4.5						
1- 2			10.0							3.5						11.0		9.5	9.0				
2- 3								6.5		6.0	8.5												
3- 4			3.0						4.0	8.5				2.5	7.5		7.0	3.0	4.0			3.0	
4- 5	4.5		6.5				7.5					5.5		7.5	3.0							3.0	
5- 6			10.0					9.5			4.0											2.5	
6- 7					6.0			4.5		2.5							9.5					2.5	
7- 8		5.5	3.0			10.5			6.0	5.0					9.5							2.5	
8- 9			6.5				6.5			7.5					5.5	6.0		8.0		2.0		2.0	
9-10			10.0						7.5	10.0												2.0	
10-11													3.0	2.5								2.0	
11-12	5.5		3.0		10.0		10.5		7.5						7.5				7.5	3.0	1.5		
12-13			6.5			5.0	6.0	10.5		4.0			9.5		7.5				2.5				2.5
13-14			9.5			9.5		5.5		6.5					3.0								
14-15		6.5			6.5					9.0							3.0						
15-16			2.5				10.0		9.5					2.5				6.5					
16-17			6.0				5.0	8.5			9.5			7.0	9.5								
17-18			9.5							3.0		7.0			5.0	7.5	5.5		11.0				
18-19	6.5								2.5	5.5													
19-20			2.5			8.5	9.0			8.0	4.5								6.0				2.0
20-21			6.0				4.0	6.5		10.5							8.0						
21-22		7.5	9.5											2.5	7.5								
22-23									4.5	2.0			4.0	7.0	3.0			5.0					
23-24			2.5				8.0	10.0		4.5							10.0			2.5		3.0	
24-25			6.0	7.0				4.5		7.0						3.0						3.0	
25-26	7.5		9.5			7.5				9.5		10.5			9.5							3.0	
26-27									6.0						5.0	9.5			9.5			2.5	
27-28			2.5				7.5	8.0						2.0				10.0				2.5	2.0
28-29		8.5	6.0							3.5				7.0					4.0			2.0	
29-30			9.0							6.0								3.5				2.0	

	DK	SW	SW	VX	CM	CO	CO	Y	UU	UV	VZ	T	SS	DELT	RY	UZ	EW	FL	U	SX	V508	V839	1010
	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LMI	LIB	LIB	LYN	LYR	LYR	LYR	OPH	OPH	OPH	OPH	OPH
MAX	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	11.2	8.7	5.8	10.5	10.1	8.8	6.2
MIN	11	10	10	12.3	9.5	11	11	12.7	12.7	10.2	11.7	12.6	11.3	5.9	13.3	11	13.6	9.5	6.5	11.2	10.7	9.4	7
DUR	4	3	3	4	4	5	5	5	4	3	4	6	6	7	4	5	5	4	5	5	3	3	4
TOT																							
			(S)				(S)																
0- 1		6.0														3.5	2.0				4.5	4.0	
1- 2		5.0							2.5			3.0									5.5	9.5	6.5
2- 3	2.0					8.0				2.0								9.5			6.5	5.5	
3- 4			7.0		6.0								7.0								7.0		6.0
4- 5			6.5									3.5			3.0			2.0			8.0	6.5	
5- 6			5.5			10.0				2.0												2.0	6.0
6- 7			4.5		11.0		4.0		3.5				4.0							3.0			7.5
7- 8		7.5										4.0						10.5			2.0	3.0	5.5
8- 9		6.5								2.0										4.5	3.0	8.5	
9-10		5.5					6.0												2.5		4.0	4.0	5.0
10-11		4.5									3.0	4.5						5.0		6.0	4.5	9.5	
11-12			7.5	5.5	6.5					2.0											5.5	5.0	4.5
12-13			7.0	7.5			8.0											9.5		7.5	6.5		
13-14			6.0	9.5		3.0		3.0				5.0	8.5			9.5					7.0	6.5	4.5
14-15	2.5		5.0							2.0					4.0				3.5	9.0	8.0	2.0	
15-16						10.0										7.0						7.5	4.0
16-17		7.0				5.0						5.0	5.5	8.5								3.0	
17-18		6.0								2.0						4.0					2.0	8.5	3.5
18-19		5.0						4.5													3.0	4.0	
19-20					7.0	7.0							2.5						4.5		4.0	9.5	3.0
20-21			7.0							2.0											4.5	5.0	
21-22			6.5															2.5			5.5		3.0
22-23			5.5			9.0					2.5										6.5	6.5	
23-24			4.5				3.0			2.0				8.0				7.0			7.0	2.0	2.5
24-25		7.5													5.0				5.0		8.0	7.5	
25-26		6.5		5.0														10.0				3.0	2.0
26-27	2.5	5.5		7.0			5.0			2.0			7.0									8.5	10.0
27-28		4.5		8.5	7.5										2.0			9.0			2.0	4.0	
28-29			7.5	10.5																	3.0	9.5	9.5
29-30			6.5				7.0			2.0			4.0					7.5	6.0		4.0	5.0	

	U	U	TY	AQ	BB	BB	BX	DI	GP	RT	ST	XZ	BETA	Y	U	V505	1968	AO	CC	CC	V	RV	W
	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PER	PER	PER	PER	PSC	SGE	SGR	SGR	SER	SER	SER	TRI	TRI	UMA
MAX	9.7	9.7	10.5	10.3	10.6	10.6	10.9	9.6	10.2	10.6	9.7	10.6	2.2	9	6.4	6.4	12.3	10.6	11.1	11.1	10.9	11.4	9.1
MIN	10.5	10.5	12.6	13	11.2	11.2	11.5	10.8	11	12	13.2	12.7	3.5	12	9.1	7.6	13.3	12.1	11.7	11.7	11.9	12.5	9.9
DUR	3	3	6	12	3	3	3	2	4	4	5	4	8	7	6	5	4	4	4	4	4	4	3
TOT				4							1				2								
		(S)				(S)														(S)			
0- 1	7.5				8.0		4.0	7.5													4.5	9.5	4.0
1- 2						6.0											6.5			5.0	10.5		4.0
2- 3						8.0		10.5		10.0		10.0					9.5	9.5		6.0			4.0
3- 4	7.5				5.5		6.0								4.5		6.5			6.5		10.0	4.0
4- 5					7.5										9.0		3.5			7.5	9.0		4.0
5- 6						5.5	5.0	7.0									5.0		2.0	8.0			4.0
6- 7	7.5					7.5			10.5								8.0		3.0	9.0		10.5	4.0
7- 8							4.0	10.0	10.0										3.5	9.5			4.0
8- 9					7.0				9.0	9.0					6.5					4.5			4.0
9-10	7.5								8.5		10.5											10.5	4.0
10-11						7.0	6.0	6.5	8.0							7.0	6.5	7.5	6.0				4.5
11-12									7.5								9.5	4.5	6.5		9.5		4.5
12-13	7.5				6.5		5.5	9.5	7.0											7.5			4.5
13-14					8.5				6.5										8.0	2.0			4.5
14-15		9.0				6.0	4.5		5.5				10.5				5.0		9.0	2.5			4.5
15-16	7.5					8.5			5.0								8.0		9.5	3.5			4.5
16-17					6.0											5.0				4.5			4.5
17-18		9.0			8.0		6.5	9.5			9.0	9.5				9.0		8.5		5.0			4.5
18-19	7.5		8.0	5.5		5.5								10.0			4.0	5.5		6.0	10.0		4.5
19-20						7.5	5.5			10.0							7.0	2.5		6.5			4.5
20-21		9.0			5.5												10.0			7.5			4.5
21-22	7.5		10.0		7.5		4.5												2.0	8.0	8.0		4.5
22-23								9.0											2.5	9.0			4.5
23-24		9.0				7.0										7.0	5.5		3.5	9.5			4.5
24-25	7.5																8.5	9.0	4.0				4.5
25-26					7.0					8.5				8.0	4.0			6.0	5.0		10.5		4.5
26-27		9.0					6.0											3.5	6.0				4.5
27-28	7.5					6.5		8.5									4.0		6.5				4.5
28-29						8.5	5.0										7.0		7.5		8.5		4.5
29-30		8.5		8.0	6.5											5.0	10.0		8.0	2.0			4.5

	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	AG	AH	AH	AK	AW	AW	AZ	AZ	BH	Z	AW	AX	AY	BE
	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VUL	VUL	VUL	VUL	VUL
MAX	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	10.8	10.8	11	11	9.9	7.4	10.8	11	11	9.9
MIN	8.9	12.4	12.4	13.8	11	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
DUR	6	3	3	1	3	3	4	4	4	4	4	4	4	3	3	3	3	4	6	5	5	4	5
TOT																							
			(S)								(S)			(S)		(S)							
0- 1		6.0	2.0	2.5							6.0			2.5	7.0	5.5		8.5		8.5			
1- 2	2.5	7.5	3.5	7.0	3.0		5.5		7.5	4.0	6.5			4.0		6.5	2.5						
2- 3			5.0	1.5					4.5	2.0				5.5		8.0	3.5		7.5	9.0	10.5		
3- 4		2.0	6.5	6.0	4.5			3.0	2.0	2.0	2.5			7.0	3.0		5.0	4.0					
4- 5	4.0	3.5	8.0					4.0			3.0			4.5	2.0	6.0				10.0			
5- 6		5.0		5.5	6.0			5.0			3.5	5.5		6.0	3.0	7.0		6.0					
6- 7		6.5	2.5					6.5	5.0		4.0			3.0	7.5	4.0			8.0	10.5			
7- 8	5.5	8.0	4.0	4.5	7.5			7.5	2.5		4.5			4.5		5.5		6.0		3.5		6.0	3.0
8- 9			5.5	9.0		4.5	3.0	9.0		5.5	4.5			6.0	2.0	6.5	2.5	1.5					
9-10		3.0	7.0	3.5				10.0			5.0			7.5	3.5	7.5	3.5						
10-11	7.0	4.5		8.0		10.5			5.5	4.0	5.5				5.0		4.5		4.0	9.0			5.5
11-12		6.0		3.0					3.0		6.0	4.5	2.0	6.5		6.0				4.5			
12-13		7.5	3.0	7.0	3.0					2.0	6.5			3.5		3.0	7.0	4.0					
13-14			4.5	2.0				2.0			2.0			5.0		4.0							8.0
14-15		2.0	6.0	6.5	4.5			3.5	6.0		2.5			6.5	2.5	5.0				9.5			
15-16		3.5	7.5					4.5	3.0		3.0				4.0	6.5	2.0	2.0	5.0				
16-17		5.0		5.5	6.0			6.0			3.5			5.0	7.5	3.5	6.0						10.5
17-18		6.5	2.0				8.0	7.0		5.5	4.0		4.0	2.5	6.5		4.5						
18-19		8.0	4.0	5.0	7.5			8.0	6.0		4.5			4.0			5.5			10.5			
19-20			5.5	9.0		4.5		9.5	3.5	3.5	5.0			5.5		2.5	7.0		6.0		7.5		
20-21		2.5	7.0	4.0				10.5			5.0			7.0	2.5	4.0		8.0					
21-22		4.0	8.5	8.5						2.0	5.5				4.0	5.0	3.5						
22-23		5.5		3.0					6.5		6.0				5.5	6.0	2.0	10.5					
23-24		7.0	3.0	7.5	2.5				4.0		6.5		3.0	3.0	7.0	7.5	3.0		6.5				
24-25			4.5	2.5		5.5	2.5				2.0			4.5			4.5				3.5	5.0	
25-26			6.0	6.5	4.0			4.0			2.5			6.0			5.5	5.5					
26-27		3.0	7.5					5.0	7.0	5.5	3.0			7.5	3.0	2.5	6.5						
27-28		4.5		6.0	5.5			6.5	4.5		3.5				4.5	3.5	8.0	8.5	7.5				7.5
28-29		6.5	2.0					7.5		3.5	4.0			2.0	6.0	5.0							
29-30		8.0	3.5	5.0	7.0			8.5				4.5	2.5	3.5	7.5	6.0	2.0	7.5					

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

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

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	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	RW	TY	RZ	TV	AB	CW	CW	DZ	IR
	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS
MAX	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	9.8	10.5	6.4	7.3	10.2	11.8	11.8	11.6	10.8
MIN	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	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1
DUR	3	3	3	3	3	3	3	3	3	6	3	5	5	5	5	4	4	4	4	3	3	4	4
TOT			(S)		(S)		(S)		(S)					(S)							(S)		
0- 1		9.5			4.5	2.0	6.0	6.0	2.5	3.0	4.5	11.0	8.0				5.5			4.5		5.0	5.0
1- 2				7.5	4.0		5.0	3.5			9.0		2.5				10.0			3.5	7.5		
2- 3				7.0	3.0	7.5	3.5		4.5					6.0					3.0	2.5	6.5		6.0
3- 4				6.5	2.5	6.5	2.5	5.5	2.0	10.5	3.5	3.0	9.5				6.5				5.0	8.5	
4- 5				5.5	2.0	5.0		3.0	6.5		8.0	11.0	4.0								4.0	3.0	7.0
5- 6	11.0			5.0		4.0			4.0					7.5		8.0		2.0		7.0	3.0		
6- 7				4.5		3.0	6.5	5.0			2.5		11.0	1.5			4.5		5.5	6.0	2.0		8.0
7- 8				3.5	7.5		5.5	2.0	6.0		7.0	2.5	5.0				9.5			5.0		6.5	
8- 9				3.0	7.0		4.0	6.5	3.0			10.5		9.0		4.5				4.0			9.0
9-10				2.5	6.5	7.0	3.0	4.0			2.0			3.0						3.0	6.5		
10-11				2.0	5.5	5.5	2.0		5.0		6.5		6.5		7.0				8.0	2.0	5.5	10.0	10.0
11-12					5.0	4.5		6.0	2.5		11.0	2.0		10.0							4.5	4.5	2.5
12-13					4.5	3.5	7.0	3.5	7.0			10.0		4.5		11.0	4.0	8.5		7.5	3.5		11.0
13-14				7.5	3.5	2.0	6.0		4.5	8.5	5.5		8.0				9.0			6.5	2.5		3.5
14-15				7.0	3.0		5.0	5.5	2.0		10.0		2.5					4.0	10.5	5.0		8.0	
15-16				6.5	2.5	7.5	3.5	3.0	6.5			2.0		6.0		7.0				4.0		3.0	4.5
16-17				5.5	2.0	6.5	2.5		4.0		4.5	9.5	9.5							3.0	7.0		
17-18		11.0		5.0		5.0		4.5			9.0		3.5						4.0	2.0	6.0		5.5
18-19	11.0			4.5		4.0		2.0	5.5					7.0		3.5	3.5				5.0	6.0	
19-20				3.5	7.5	3.0	6.5	6.5	3.0		4.0		10.5				8.0				4.0		6.5
20-21				3.0	7.0		5.5	4.0			8.5	9.5	5.0		11.0						6.5	3.0	
21-22				2.5	6.5		4.5		5.0					8.5				10.0	6.5	5.5	2.0	9.5	7.5
22-23			10.5	2.0	5.5	7.0	3.0	6.0	2.5		3.0			3.0		10.0				4.5		4.5	
23-24					5.0	6.0	2.0	3.5	7.0	6.5	7.5		6.5				5.5			3.5	7.5		8.5
24-25					4.5	4.5			4.5			9.0		10.0			3.0			2.5	6.5		
25-26				7.5	3.5	3.5	7.5	5.5			2.0			4.0		6.0	7.5		9.0		5.5	8.0	9.5
26-27				7.0	3.0	2.5	6.0	2.5	6.0		6.5		8.0								4.0	2.5	2.0
27-28		10.0		6.5	2.5		5.0		3.5		11.0		2.0		6.0					7.0	3.0		10.5
28-29				5.5	1.5	7.5	4.0	4.5				8.5		5.5					2.5	6.0	2.0	11.0	3.0
29-30				5.0		6.5	2.5	2.0	5.5		6.0		9.0								5.0		6.0
30-31				4.5		5.0		6.5	3.0		10.5		3.5				2.5			4.0			4.0

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	IS	MM	OR	PV	PV	V364	V364	V375	U	SU	WZ	WZ	XX	DL	DV	EG	SS	RW	RW	RZ	RZ	SS	SS
	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CET	COM	COM	COM	COM	COM	COM
MAX	11.6	11.3	11.4	10	10	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.4	11.6	9.6	9.4	11	11	10	10	10.9	10.9
MIN	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	13.2	12.4	10.6	13	11.6	11.6	10.7	10.7	11.5	11.5
DUR	5	5	4	3	3	4	4	5	4	4	3	3	4	5	4	3	5	3	3	3	3	4	4
TOT									2								2						
					(S)		(S)					(S)						(S)		(S)		(S)	
0- 1	3.0	10.0	7.5		6.5				10.0		5.0	10.0				11.0			4.0	4.5			4.0
1- 2				3.0						10.5		6.0					10.0	5.5	3.0	4.5		4.5	
2- 3							7.5	6.5		8.5	7.0	2.0	4.0	5.0		2.0		4.5		5.0			5.5
3- 4										6.0	3.0	8.0			4.5	4.5		3.0		5.5			
4- 5										3.5	9.0	4.0			8.5	6.5	9.5	2.0	5.0		2.0	2.0	
5- 6			7.0				9.5	5.5	9.5		5.0	10.0				8.5			3.5		2.0	2.0	
6- 7		5.0		9.0		4.0						6.0				10.5		5.5	2.5		2.5	3.5	3.0
7- 8		9.0			6.5						7.0	2.0		2.5			9.0	4.0			3.0	3.5	4.5
8- 9				3.0				4.0			3.0	8.0				2.0		3.0			3.5	5.0	
9-10	8.0					6.0					9.0	4.0	4.5			4.0			4.5		3.5		
10-11			7.0						9.0	11.0	5.0			9.0	3.5	6.0			3.5		4.0		1.5
11-12	4.0							3.0		8.5		6.0			7.5	8.5		5.0	2.0		4.5	2.5	
12-13						8.0				6.0	7.5	2.5				10.5		3.5			4.5		3.5
13-14		4.0		9.0						4.0	3.5	8.5						2.5	5.5		5.0	4.0	
14-15		8.0			6.5						9.5	4.5							4.0		5.5		5.0
15-16			6.5	3.0		10.0			9.0		5.5			6.0		4.0			3.0	2.0		5.5	
16-17							4.5					6.5	4.5			6.0		4.5		2.0			
17-18											7.5	2.5			3.0	8.0		3.5		2.5			2.0
18-19											3.5	8.5			7.0	10.5		2.0	5.0	3.0		3.0	
19-20							6.5				9.5	4.5			11.0				3.5	3.5			3.5
20-21	9.0	3.0	6.0	9.0					8.5	9.0	5.5			3.5				5.5	2.5	3.5		4.5	
21-22		6.5			6.5			10.5		6.5		6.5				3.5		4.0		4.0			5.5
22-23	5.5	10.5		3.0			9.0			4.0	7.5	2.5				6.0		3.0		4.5			
23-24										2.0	4.0	9.0	5.0	10.0		8.0		1.5	4.5	5.0		2.0	
24-25								9.0			10.0	5.0			2.5	10.0			3.5	5.0			2.5
25-26			5.5			11.0			8.0		6.0				6.5			5.0	2.0	5.5		3.5	
26-27						5.5					2.0	7.0			10.0			4.0			2.0		4.0
27-28				9.0							8.0	3.0				3.5		2.5	5.5		2.0	5.0	
28-29		5.5			6.5						4.0	9.0		7.5		5.5			4.0		2.5		5.5
29-30		9.5		3.0		7.5				9.5		5.0				7.5			3.0		3.0		
30-31			5.0					6.5	8.0	7.0	6.0		5.5			10.0		4.5	2.0		3.5	2.5	

	CC	CC	U	RW	W	W	RV	RV	V	Y	SW	WW	ZZ	AE	BR	CG	DK	KV	V346	V387	V388	V456	V466
	COM	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG
MAX	11	11	7.6	10.1	10.6	10.6	9	9	9.5	7	9.3	9.9	10.7	11.8	9.4	11	10.3	11.5	11.8	11.5	9.7	10.8	10.8
MIN	11.9	11.9	8.8	10.6	11.2	11.2	10	10	10.2	7.6	11.8	13.2	12	12.8	10.5	11.8	10.8	12.6	13.6	12.3	10.3	11.9	11.6
DUR	2	2	5	4	4	4	4	4	4	6	5	5	4	4	4	3	4	5	5	3	3	3	4
TOT											2												
		(S)			(S)		(S)																
0- 1	3.5				3.0					6.0				6.0		8.0	3.0			3.0	9.5		7.0
1- 2		3.5		3.5		2.5			2.0				5.0	5.5			1.5			9.5	6.0		
2- 3	3.0						3.0					6.5	11.0	4.5	2.5	5.5					2.5		
3- 4		3.0		8.0						6.0			2.0	4.0	10.5		10.0		6.0	8.0		10.0	2.0
4- 5	3.0												8.5	3.0		3.0	9.0					7.0	
5- 6		2.5					2.5				4.0			2.5		9.0	7.5			6.0		4.5	
6- 7	2.5	5.0		5.5		3.5				6.0			5.5	1.5	2.5		6.0				10.0	2.0	
7- 8	5.0	2.5			2.5										10.5	6.5	4.5			4.0	6.5		6.0
8- 9	2.0	5.0				2.0	2.5						3.0				3.0				11.0	3.0	
9-10	4.5	2.0		3.5						6.0			9.0			4.0	2.0				2.0		
10-11	2.0	4.5													2.5	10.5		9.0		9.0			
11-12	4.5			7.5			2.0						6.0		10.5		10.5					10.5	10.5
12-13		4.0								6.0		5.5				8.0	9.0			7.0	10.0	7.5	
13-14	4.0					3.0							3.5				7.5	5.0			6.5	5.0	
14-15		4.0		5.5	2.5		2.0				7.5		9.5		2.5	5.0	6.0		5.5	5.0	3.5	2.5	5.0
15-16	3.5									5.5					10.5		4.5						
16-17		3.5											7.0			2.5	3.0			3.5			
17-18	3.5			3.0												9.0	2.0			10.0			
18-19		3.0	7.5							5.5			4.0		2.5						10.5		9.5
19-20	3.0			7.5	3.5								10.5		10.5	6.5	10.5			8.0	7.0	11.0	
20-21		3.0				2.5											9.0				3.5	8.0	
21-22	2.5				2.0					5.5			7.5			4.0	7.5			6.5		5.5	4.0
22-23	5.0	2.5		5.0							4.5				2.5	10.0	6.0		11.0			3.0	
23-24	2.5	5.0									11.0		5.0		10.5		4.5			4.5			
24-25	5.0	2.0					3.5			5.5			11.0			7.5	3.5				10.5		
25-26	2.0	4.5	5.5	3.0									2.0	11.0			2.0		4.5	2.5	7.5		8.5
26-27	4.5	2.0			3.0								8.5	10.0	2.5	5.0				9.5	4.0		
27-28		4.5		7.5		2.5		3.0		5.5				9.5	10.5		10.5	9.5					
28-29	4.0												5.5	8.5		2.5	9.0			7.5		8.5	3.0
29-30		4.0												8.0		8.5	7.5					6.0	
30-31	4.0			5.0				3.0		5.0			3.0	7.0	2.5		6.0	6.0		5.5	11.0	3.5	

	V466	V477	V477	V704	W	TT	TY	YY	FZ	Z	RZ	TW	UZ	UZ	AI	SZ	TU	UX	CC	CT	SW	SW	VX	
	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DEL	DRA	DRA	DRA	DRA	DRA	DRA	HER	HER	HER	HER	HER	LAC	LAC	LAC	
MAX	10.8	8.3	8.3	13.8	9.4	10.6	9.6	11	10.2	10.8	10	7.8	9.9	9.9	7.2	10.2	10.6	8.9	9.5	9.9	9.2	9.2	10.9	
MIN	11.6	9.2	8.7	14.6	12.7	12.5	10.8	12	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12	13.4	9.8	12.8	11.2	10	10	12.3	
DUR	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	5	5	4	4	3	3	4	
TOT					2							1					1							
	(S)		(S)											(S)								(S)		
0- 1									11.0	7.5	8.5	10.0	8.0			7.5						6.0		
1- 2				2.5			6.0	6.5	6.0		11.0					3.0		4.0				5.0		
2- 3	9.0	8.5		5.5			11.0															4.0		
3- 4				9.0							2.5	5.5			2.0		4.5					7.0	3.0	
4- 5					9.0			10.5	9.0	9.5	5.0				7.0	9.5		6.5	8.5			6.0		
5- 6	4.0		9.5	2.0				5.5	4.0		7.5			5.5		5.0	11.0			7.5	5.0			
6- 7				5.5							10.0								2.0			4.0		
7- 8				9.0	6.0	5.0				2.5								8.5		2.5	3.5	7.0		
8- 9						9.5	10.0	7.0														6.0	2.5	
9-10	8.0	9.5		2.0			5.0				4.0				2.0	7.5						5.5	4.0	
10-11			2.0	5.5		3.0					6.5		2.5		6.5	3.0						4.5	6.0	
11-12				9.0					10.0	4.5	9.0								7.0			7.5	3.5	8.0
12-13	3.0		10.5					9.0	5.0								6.0					6.5	2.5	9.5
13-14				2.0			4.0	4.0					9.0			9.5						5.5		
14-15		2.0		5.5			8.5				3.0	11.0				5.0			6.0			4.5		
15-16				8.5					8.0	6.0	5.5							2.5				3.5	7.5	
16-17	7.0	10.5						8.0	3.0		8.0				6.5							3.0	6.5	
17-18			3.0	2.0				3.5			10.5	6.5											5.5	
18-19				5.0	8.0									6.5		7.5		5.0	5.5				5.0	
19-20	2.0			8.5			3.0		6.0	8.0	2.0					3.0							4.0	
20-21							7.5	7.5			4.5											7.0	3.0	
21-22		3.0						2.5			7.0						7.5	7.5				6.0		
22-23				5.0					9.5		9.5				6.5	9.5						5.0		
23-24	6.0			8.5	3.5				4.0	9.5			4.0		11.0	5.0				4.5	4.0			3.5
24-25			4.0					6.5										9.5				3.0	7.0	5.5
25-26											3.5								3.5				6.0	7.0
26-27				5.0			6.5		7.5	2.5	6.0		10.0										5.5	9.0
27-28	10.5			8.5		8.5	11.0	10.5			8.0					7.5							4.5	10.5
28-29		4.0						5.5			10.5				6.0	3.0	3.0					7.5	3.5	
29-30									10.5						11.0							6.5	2.5	
30-31	5.0			5.0		5.0			5.5	4.5	2.5							9.5		8.5	8.0	5.5		

	CM	CO	CO	Y	UU	UV	VZ	SS	DELT	RY	UZ	EW	FL	U	SX	V508	V839	1010	EQ	U	U	TY	AQ
	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LIB	LIB	LYN	LYR	LYR	LYR	OPH	OPH	OPH	OPH	OPH	ORI	PEG	PEG	PEG	PEG
MAX	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	10.3	9.7	9.7	10.5	10.3
MIN	9.5	11	11	12.7	12.7	10.2	11.7	11.3	5.9	13.3	11	13.6	9.5	6.5	11.2	10.7	9.4	7	13.3	10.5	10.5	12.6	13
DUR	4	5	5	5	4	3	4	6	7	4	5	5	4	5	5	3	3	4	4	3	3	6	12
TOT																							4
			(S)																				(S)
0- 1		2.0									10.0					4.5				7.0			
1- 2												6.5				5.5	6.0					5.5	
2- 3	3.0		9.0			2.0					7.5					6.5	2.0					8.5	
3- 4		4.0										5.5				7.0	7.5			7.0			
4- 5							2.5				4.5		4.0	6.5		8.0	3.0					5.5	
5- 6	8.0		11.0			2.0						4.0					8.5					8.5	
6- 7		6.0									2.0		8.5				4.0			7.0			
7- 8										3.0		3.0											5.5
8- 9						2.0									2.0	2.0	9.5						8.5
9-10		8.0						5.5						7.5	3.5	4.0				7.0			
10-11	3.5		2.0	2.5												4.5	6.0	7.0				5.5	10.0
11-12						2.0										5.0	5.5	2.0					8.5
12-13		10.0						3.0								6.5	7.0	7.0		7.0			
13-14	8.5		4.0		2.5											6.5	7.0	3.0					5.5
14-15						2.0								8.0		8.0	8.5	6.5					8.5
15-16																	4.0			7.0			
16-17			6.0				2.0										9.5	6.0					5.5
17-18						2.0					10.5		6.0			2.0	5.0		11.0				8.5
18-19	4.0															3.0		5.5		7.0			
19-20			8.0								8.0		10.0	9.0		4.0	6.0					5.5	6.0
20-21		3.5				2.0										4.5	2.0	5.5					8.5
21-22	9.0								6.0		5.0					5.5	7.0			7.0			
22-23			10.5					4.5								6.0	3.0	5.0				5.5	8.0
23-24		5.5				2.0					2.5					7.0	8.5						8.5
24-25																8.0	4.0	4.5		7.0			
25-26																	9.5					5.5	10.5
26-27	4.5	7.5				2.0								2.0			5.0	4.0					8.5
27-28																2.0				7.0			
28-29							1.5		5.5				3.5			3.0	6.0	4.0					5.5
29-30	9.5	9.5				2.0										3.5							8.5
30-31			3.5							2.0			7.5			4.5	7.0	3.5		7.0			

	BB	BB	BX	DI	GP	Z	RT	RV	ST	XZ	BETA	Y	U	V505	1968	AO	CC	CC	RW	RZ	TY	WY	V
	PEG	PEG	PEG	PEG	PEG	PER	PER	PER	PER	PER	PER	PSC	SGE	SGR	SGR	SER	SER	SER	TAU	TAU	TAU	TAU	TRI
MAX	10.6	10.6	10.9	9.6	10.2	9.9	10.6	10.3	9.7	10.6	2.2	9	6.4	6.4	12.3	10.6	11.1	11.1	8	10.5	11.5	11.5	10.9
MIN	11.2	11.2	11.5	10.8	11	12.4	12	12.7	13.2	12.7	3.5	12	9.1	7.6	13.3	12.1	11.7	11.7	12.5	11.2	12	11.7	11.9
DUR	3	3	3	2	4	6	4	8	5	4	8	7	6	5	4	4	4	4	4	3	2	4	4
TOT						2			1				2						1				
		(S)																	(S)				
0- 1	8.5	4.0	4.0	5.0			11.0							9.5					2.5				
1- 2		6.0					7.0	11.0							2.5				3.5				7.0
2- 3	3.5	8.0	3.0	8.0						9.0					6.0	7.0			4.0				11.0
3- 4	5.5		6.0					10.5							9.0	4.0			5.0				
4- 5	8.0	3.5	2.5																5.5			11.0	
5- 6		5.5	5.0			6.0		10.0					7.5	3.0					6.5				9.0
6- 7		7.5					9.5							7.5	4.5				7.5				
7- 8	5.0		4.5	7.5				9.0			9.0				7.5		2.0	8.0	11.0				
8- 9	7.0					7.5											2.5						7.5
9-10		5.0	3.5	11.0				8.5								8.0	3.5						
10-11		7.0	6.5							10.5		9.5				3.0	5.0	4.0					
11-12	4.5		2.5			9.0									6.0	2.0	5.0						5.5
12-13	6.5		5.5	7.0			8.5						2.0	5.5	9.0		5.5						9.5
13-14	8.5	4.5												10.0			6.5			10.5	11.0		
14-15		6.5	4.5	10.5		10.0											7.0						
15-16	4.0	8.5			11.0								11.0		4.5		8.0	2.0					8.0
16-17	6.0		3.5		10.5										7.5	8.5		2.5					
17-18	8.0	3.5	6.5	7.0	10.0		10.5			8.0						6.0		3.5					
18-19		6.0	3.0		9.0		7.0							3.5		3.0		4.0					6.0
19-20	3.5	8.0	5.5	10.0	8.5									7.5	3.5			5.0					10.5
20-21	5.5				8.0										6.5			5.5					
21-22	7.5		5.0		7.5													6.5					
22-23		5.0		6.5	7.0								5.5					7.0		10.0			8.5
23-24		7.0	4.0		6.5		9.5								2.0		2.0	8.0					
24-25	5.0			9.5	5.5				11.0						5.0	6.5	2.5						
25-26	7.0		3.0		5.0					9.5		11.0		5.5	8.0	4.0	3.5						6.5
26-27		4.5	6.0		4.5									10.0				4.0					11.0
27-28		6.5	2.0	6.0	4.0						10.5							5.0		9.5	10.5		
28-29	4.5		5.0		3.5										3.5		5.5						
29-30	6.5			9.0			8.0					5.5			6.5		6.5						9.0
30-31	8.5	4.0	4.0								7.5						7.0						

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

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	AX	AY	BE	BO	BS	BT	BU	CD
	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	11	11	9.9	10.4	11	11.8	10.6	11.5
MIN	12.5	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	5	4	5	4	3	3	3	4
TOT								
0- 1			10.0					
1- 2		9.0						7.5
2- 3				11.0			5.0	
3- 4				9.5			8.0	8.5
4- 5				8.5	4.0			
5- 6				7.5	7.5			10.0
6- 7		5.0		10.5	6.0	10.5	4.5	2.5
7- 8				5.0			8.0	
8- 9			4.0	9.5	4.0		11.0	3.5
9-10				2.5				
10-11				8.0			4.0	5.0
11-12			6.5				7.5	
12-13				7.0	10.5	3.5	10.5	6.0
13-14		10.5		9.5	7.0			
14-15			9.0	5.5	8.5	10.5	3.5	7.5
15-16				7.0			7.0	
16-17				4.0	6.0		10.0	8.5
17-18				5.0				
18-19		6.5		3.0	3.5		3.0	9.5
19-20				2.5			6.5	2.0
20-21						3.5	10.0	11.0
21-22						7.0		3.5
22-23			3.5		10.5	10.0	3.0	
23-24		2.0			9.5		6.0	4.5
24-25					8.5		9.5	
25-26			6.0		7.0			6.0
26-27					6.0		2.5	
27-28					5.0		5.5	7.0
28-29			8.5		3.5	3.0	9.0	
29-30	2.0				2.5	6.5		8.5
30-31		8.0				10.0	2.0	

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

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	WW	AP	AP	AR	AR	CL	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	AK	RW	TY
	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMI	CAP	CAP
MAX	5.7	10.9	10.9	6	6	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	10.1	9.8	10.5
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	11.5	10.8	11.6
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					9.5		11.0			3.5		4.0		4.0								7.0	
1- 2			9.5						9.5	3.0		3.0	6.5	1.5	5.0		5.0	8.0	10.5	1.5			9.0
2- 3				11.0						2.5		1.5	5.5	6.0	2.5	4.5	9.5		5.0				
3- 4		9.5				11.0	10.0			1.5	5.5		4.5	3.0	7.0							8.5	
4- 5											5.0		3.0		4.0		4.0					2.5	5.5
5- 6	8.5		9.5								4.5	6.0	2.0	5.0	1.5		8.5	8.0	6.0				
6- 7							9.0	9.0			3.5	4.5		2.5	6.0							9.5	
7- 8		9.0									3.0	3.5		7.0	3.5		3.5					4.0	1.5
8- 9					10.5						2.5	2.5	6.0	4.5			8.0		7.5				
9-10										5.5	1.5		5.0	2.0	5.5			7.5	2.0	11.0			
10-11	10.0									5.0			4.0	6.5	3.0		2.5			5.5	11.5		
11-12								8.5		4.5		6.5	2.5	4.0			7.0		9.0				8.0
12-13										3.5		5.5	1.5		5.0	2.5	11.5		3.0				
13-14						10.0	11.0			3.0		4.0		5.5	2.0		1.5	7.0		6.5		5.0	
14-15										2.5		3.0	7.0	3.0	6.5		6.0		10.5				4.5
15-16	11.0									1.5	5.5	2.0	5.5		4.0	10.0	10.5		4.5				
16-17							10.0	8.0			5.0		4.5	5.0	1.5							8.0	
17-18											4.5		3.5	2.5	6.0		5.5	7.0		2.5			
18-19						9.0			11.5		3.5	6.0	2.0	7.0	3.5		9.5		6.0				
19-20							9.0				3.0	5.0		4.5								9.5	
20-21		11.5									2.5	3.5		1.5	5.5		4.5					4.0	
21-22									7.5	5.5	1.5	2.5	6.0	6.5	2.5		9.0	6.5	7.5				7.5
22-23			11.5							5.0			5.0	3.5						1.5	11.0		
23-24						8.5		11.0		4.5			4.0		4.5		3.5					5.0	
24-25		11.0								3.5		6.5	2.5	5.5	2.0		8.0		8.5				3.5
25-26										3.0		5.5	1.5	3.0	6.5	8.0		6.0	3.0				
26-27			11.0				11.0	7.0		2.5		4.0		4.0			3.0					6.5	
27-28										1.5	5.5	3.0	7.0	5.0	1.5		7.5		10.0				
28-29		11.0				8.0			10.5		5.0	2.0	5.5	2.5	6.0					4.5			
29-30					8.0		10.0			4.0		4.5	7.0	3.5			2.0	5.5		8.0			
30-31			10.5							3.5		3.5	4.0				6.5		11.5	2.0		4.0	

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	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	PV	V364	V364	V375	U	SU	WZ	WZ	XX	DK	DL	DV
	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP
MAX	6.4	7.3	10.2	11.8	11.8	11.6	10.8	11.6	11.3	11.4	10	10	11.2	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6
MIN	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	12.4
DUR	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4	4	3	3	4	4	5	4
TOT																2							
				(S)							(S)		(S)					(S)					
0- 1	7.0			3.0	6.5			10.5		11.0							4.5	2.0	7.0				1.5
1- 2		7.0	5.0	2.0	5.5	9.5	5.0						9.5				2.0	8.0	3.0				5.5
2- 3					4.5	4.0		6.5						4.0	5.0			4.0	9.0			4.5	9.5
3- 4		2.5		7.5	3.5		6.0			9.0									5.5				
4- 5				6.5	2.5			3.0	4.5	4.5		6.5	11.5			7.5		6.5	1.5		11.5		
5- 6	2.0		7.5	5.5	1.5	7.5	7.0		8.0	10.5	3.0			6.0	4.0			2.5	7.5		11.0	11.0	
6- 7	6.5			4.0		2.5												8.5	3.5	5.5	10.5		
7- 8	11.0			3.0	7.0		8.0										9.5	4.5	9.5		10.5	2.0	
8- 9				2.0	6.0	11.0							8.0	2.5			7.5		5.5		10.0		5.0
9-10			9.5		5.0	5.5	9.0			4.5			2.5			7.0	5.0	6.5	1.5		9.5		9.0
10-11		8.5		4.0		1.5				10.0	9.0						2.5	2.5	7.5		9.0	8.5	
11-12	1.5			6.5	3.0		10.0	11.5	3.0			7.0		10.0	1.5			8.5	3.5		9.0		
12-13	6.0	4.0	3.5	5.5	2.0	9.0	2.5		7.0		3.0		4.5					4.5	9.5		8.5		
13-14	10.5			4.5		4.0	11.0	7.5	10.5										5.5	6.0	8.0		
14-15				3.5	7.5		3.5			4.0						7.0		6.5	1.5		8.0		
15-16				2.5	6.5			4.0		10.0			7.0		11.5			3.0	8.0		7.5	5.5	4.5
16-17			6.0	1.5	5.5	7.0	4.5							1.5			10.0	9.0	4.0		7.0		8.0
17-18				4.0	2.0						9.0						7.5	5.0	10.0		7.0		
18-19	5.5			7.0	3.0		5.5		2.0			7.0	9.0		10.0		5.0		6.0		6.5		
19-20	10.0	10.0		6.0	2.0	10.5			6.0	3.5	3.0			3.5		6.5	3.0	7.0	2.0		6.0		
20-21			8.0	5.0		5.5	6.5		9.5	9.5								3.0	8.0	6.0	6.0	3.0	
21-22		5.5		4.0								11.0		9.0				9.0	4.0		5.5		
22-23				3.0	6.5		7.5						5.5					5.0			5.0		3.5
23-24			2.0	2.0	5.5	8.5													6.0		5.0	9.5	7.5
24-25	5.0		10.5	4.5	3.5	8.5	9.0			3.0	9.0				7.5	6.0		7.0	2.0		4.5		11.5
25-26	9.5			7.5	3.5					9.0		7.0		7.5			10.5	3.0	8.0		4.0		
26-27				6.5	2.5		9.5	5.0	4.5		3.0		2.0				8.0	9.5	4.5		4.0		
27-28			4.0	5.5	1.5	7.0	1.5		8.5						6.5		5.5	5.5		6.5	3.5		
28-29		11.5		4.5		2.0	10.5	1.5						9.5			3.0	1.5	6.5		3.0	7.0	
29-30				3.0	7.0		2.5			2.5			4.0			6.0		7.5	2.5		3.0		3.0
30-31	4.0	7.0		2.0	6.0	10.5	11.5			8.5				5.0				3.5	8.5		2.5		7.0

	EG	RW	RW	RZ	RZ	SS	SS	CC	CC	U	RW	W	Y	SW	WW	ZZ	AE	BR	CG	DK	KV	V346	V387
	CEP	COM	COM	COM	COM	COM	COM	COM	COM	CRB	CRB	CRV	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG
MAX	9.6	11	11	10	10	10.9	10.9	11	11	7.6	10.1	10.6	7	9.3	9.9	10.7	11.8	9.4	11	10.3	11.5	11.8	11.5
MIN	10.6	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.2	7.6	11.8	13.2	12	12.8	10.5	11.8	10.8	12.6	13.6	12.3
DUR	3	3	3	3	3	4	4	2	2	5	4	4	6	5	5	4	4	4	3	4	5	5	3
TOT																2							
			(S)		(S)		(S)		(S)														
0- 1		3.5			3.5		3.0									9.0	6.5	10.5	6.0	4.5			
1- 2		2.0								3.0					3.0		6.0			3.5			3.5
2- 3	3.0		4.0					3.5		2.5		5.0				6.5	5.0		3.5	2.0	2.0	10.0	10.5
3- 4	5.5		2.5					3.0									4.5	2.5	10.0				2.0
4- 5	7.5		1.5					3.0		7.0					11.0	3.5	3.5	10.0		10.5			8.5
5- 6	9.5	3.0		1.5		2.0	3.0					5.0				9.5	3.0		7.5	9.0		4.0	
6- 7		2.0		2.0		2.5		2.5						4.5			2.0			7.5			6.5
7- 8			3.5	2.0		3.5	2.5			5.0						7.0	1.5	2.0	5.0	6.0			
8- 9	3.0		2.0	2.5				2.5				5.0						10.0	11.0	5.0			5.0
9-10	5.0	4.0		3.0			2.0									4.0			2.0	3.5			11.5
10-11	7.5	2.5		3.5				2.0		2.5						10.5			8.5	2.0			3.0
11-12	9.5	1.5		3.5		1.5		2.0				5.0			2.0	1.5		2.0					9.5
12-13	11.5		3.0				2.5	1.5		7.0						7.5		10.0	6.0	10.5			
13-14			2.0			3.0		1.5												9.0	10.5	9.5	8.0
14-15	3.0	3.5						1.5				5.0			9.5	5.0			3.5	7.5			
15-16	5.0	2.5								4.5				8.0		11.0		2.0	9.5	6.0			6.0
16-17	7.0		4.0		1.5											2.0		10.0		5.0	6.5	3.5	
17-18	9.0		2.5		2.0								4.5			8.5			7.0	3.5			4.0
18-19	11.5		1.5		2.5	2.0		3.5		2.5										2.0			11.0
19-20		3.0			2.5		3.0	3.0								5.5		2.0	4.5		3.0		2.0
20-21	2.5	2.0			3.0	3.5		3.0		6.5		4.5						10.0	11.0	10.5			9.0
21-22	4.5		3.5		3.5			3.0								3.0			2.0	9.0			
22-23	7.0		2.5		4.0			2.5								9.0			8.5	7.5			7.0
23-24	9.0							2.5		4.5		4.5						2.0		6.5			
24-25	11.0	2.5				1.5	2.5							11.5	8.5	6.5		10.0	6.0	5.0		9.0	5.0
25-26		1.5				2.5		2.0	7.0								11.5			3.5			
26-27	2.5		3.0			3.0	2.0			2.0		4.5				3.5	10.5		3.0	2.0			3.5
27-28	4.5		2.0	1.5				2.0								9.5	10.0	2.0	9.5			3.0	10.0
28-29	6.5	3.5		2.0			1.5			6.5							9.0	10.0		10.5			1.5
29-30	8.5	2.5		2.5				1.5				4.5				7.0	8.5		7.0	9.0			8.0
30-31	11.0			2.5		1.5		1.5			1.5						7.5			7.5	11.5		

	UX	CC	CT	SW	SW	VX	CM	CO	CO	RR	SS	DELT	RY	UZ	EW	FL	U	SX	V508	V839	1010	EQ	ER
	HER	HER	HER	LAC	LAC	LAC	LAC	LAC	LAC	LEP	LIB	LIB	LYN	LYR	LYR	LYR	OPH	OPH	OPH	OPH	OPH	ORI	ORI
MAX	8.9	9.5	9.9	9.2	9.2	10.9	8.5	10.5	10.5	10.2	10.4	4.8	11.9	9.8	11.2	8.7	5.8	10.5	10.1	8.8	6.2	10.3	9.5
MIN	9.8	12.8	11.2	10	10	12.3	9.5	11	11	10.9	11.3	5.9	13.3	11	13.6	9.5	6.5	11.2	10.7	9.4	7	13.3	10.2
DUR	5	4	4	3	3	4	4	5	5	4	6	7	4	5	5	4	5	5	3	3	4	4	3
TOT																							
					(S)				(S)														
0- 1				4.5													2.5		5.5	3.0		10.5	
1- 2	3.5	2.0	3.0	3.5	7.5			11.5											6.0	8.0	3.0		
2- 3				2.5	6.5				5.5										7.0	4.0			
3- 4				2.0	5.5		5.5							11.0	9.5				8.0		2.5		
4- 5	6.0				5.0						3.0									5.0			
5- 6					4.0				7.5						8.5	8.5	3.5					2.0	
6- 7				7.0	3.0	2.5	10.5	2.5		11.0											2.0	6.0	
7- 8	8.0			6.0	2.0	4.5									6.0	7.0				3.0	1.5	2.0	10.0
8- 9			6.0	5.0		6.5														3.5	7.0		
9-10				4.0		8.0		4.5						3.0	6.0			2.0	4.5	2.5	1.5		
10-11				3.0	7.0	10.0										5.0	4.0		5.5	8.0			
11-12				2.5	6.0		6.0		11.5							4.5			3.5	6.0	4.0		
12-13				1.5	5.0			6.5								9.0				7.0			
13-14		5.5			4.5								10.5			3.5		5.0	8.0	5.0			
14-15				7.0	3.5		11.0				4.5											9.5	9.5
15-16	2.0			6.5	2.5			8.5								2.0		5.0			6.0		
16-17				5.5	1.5		1.5		2.5											2.0	1.5		
17-18			4.5	4.5						10.5	1.5									3.0	7.0		
18-19	4.5			3.5	7.5			10.5				4.5								3.5	2.5		
19-20				2.5	6.5		6.5		4.5											4.5	8.0		
20-21		4.0		2.0	5.5	2.0												6.0		5.5	4.0		
21-22	7.0				4.5	4.0										2.5				6.0		9.0	
22-23				7.5	4.0	5.5	11.5		6.5					9.0						7.0	5.0		
23-24				6.5	3.0	7.5		1.5					11.5			6.5				8.0			
24-25				6.0	2.0	9.0	2.0							6.5							6.0		
25-26				5.0		11.0			8.5		4.0					11.0	6.5				1.5		9.5
26-27			3.0	4.0				3.5						3.5						2.0	7.0		
27-28		2.5		3.0	7.0		7.0				3.0									3.0	2.5		
28-29				2.0	6.0				10.5	10.5										3.5	8.0	6.0	
29-30				1.5	5.0			5.5												4.5	3.5		
30-31					4.0												7.5		5.5		5.5		

	AO	CC	CC	RW	RZ	TY	WY	AM	EQ	EQ	V	X	RV	W	TY	TY	UX	VV	XZ	ZZ	RU	VV	AG
	SER	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR	VIR
MAX	10.6	11.1	11.1	8	10.5	11.5	11.5	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	11.7	8.8
MIN	12.1	11.7	11.7	12.5	11.2	12	11.7	12.3	11	11	11.9	12	12.5	9.9	12.4	12.4	13.8	11	11.7	11.2	11.4	13.5	9.4
DUR	4	4	4	4	3	2	4	5	3	3	4	4	4	3	3	3	1	3	3	4	4	4	4
TOT				1																			
			(S)							(S)				(S)		(S)							
0- 1			2.0				11.5						10.5	1.5	5.5	1.5	2.0				9.0	2.0	
1- 2	4.5		2.5	9.0	9.5						7.5		5.0	1.5		3.0	6.0				10.5		
2- 3	1.5		3.5								11.5	11.5		1.5		4.5				7.5			
3- 4			4.0					8.5				10.5	11.0	1.5	1.5	6.0	5.5						
4- 5			5.0						6.5		5.5	10.0	5.0	1.5	3.0						1.5	2.5	
5- 6			5.5					10.0	7.5		9.5	9.0		1.5	5.0		4.5	10.0			2.5		1.5
6- 7				9.0					8.0		8.5	11.5	1.5			2.0		2.5			4.0		
7- 8						9.5	11.0				3.5	8.0	5.5	1.5		3.5	3.5	11.5	1.5		5.0		
8- 9	5.5	1.5									8.0	7.0		1.5		5.0					6.0	3.0	
9-10	2.5	2.5				9.0	11.5					6.5		1.5	2.5		3.0			5.0	7.5		
10-11		3.5				10.5						6.0	6.0	1.5	4.0						8.5		
11-12		4.0			9.0					6.5	6.0	5.0		1.5	5.5		2.0				10.0		
12-13		5.0		11.0						7.5	10.0	4.5		1.5		2.5	6.5				11.0	3.0	
13-14		5.5								8.0			6.0	1.5		4.0	1.5						
14-15		6.5									4.5			1.5	1.5	6.0	5.5						1.5
15-16	6.5										8.5			1.5	3.0						2.0		
16-17	3.5		1.5		8.5	9.5							6.5	1.5	4.5		5.0	10.0		2.5	3.0	3.5	
17-18			2.5											1.5	6.0	2.0		2.5			4.5		
18-19			3.0						6.5		6.5			1.5		3.5	4.0	11.5	2.0	9.5	5.5		
19-20			4.0						7.0		10.5		7.0	2.0		5.0					6.5		
20-21			5.0						8.0					2.0	2.0		3.0				8.0		
21-22			5.5		8.0						5.0			2.0	3.5						9.0	1.5	
22-23			6.5								9.0		7.0	2.0	5.0			2.5			10.5		
23-24	4.0					9.0								2.0		2.5	7.0				11.5		1.5
24-25	1.5	1.5				11.0								2.0		4.0	1.5						
25-26		2.5					10.0			6.5	7.0		7.5	2.0	1.5	5.5	6.0			7.5	1.5	1.5	
26-27		3.0		7.0	8.0					7.0	11.0			2.0	3.0						2.5		
27-28		4.0								7.5				2.0	4.5		5.0	10.0			3.5		
28-29		4.5			10.0						5.5		8.0	2.0	6.0	1.5		2.5			5.0		
29-30		5.5									9.5			2.0		3.0	4.5	11.5	2.0		6.0	2.0	
30-31	5.0	6.5												2.0		4.5					7.5		

	AH	AH	AK	AW	AW	AZ	AZ	BH	Z	AW	AX	AY	BE	BO	BS	BT	BU	CD
	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	9.7	9.7	10	10.8	10.8	11	11	9.9	7.4	10.8	11	11	9.9	10.4	11	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				4.5	2.5		11.0				5.5	9.5
1- 2				1.5		3.0								10.5			8.5	2.0
2- 3				3.0							3.0			9.5				10.5
3- 4									4.0	9.5				8.0			1.5	3.0
4- 5					1.5		2.0			5.0	3.5	3.5		7.0			5.0	
5- 6	1.5		2.5		3.0		3.5	1.5					2.5	6.0	3.0	8.0	8.0	4.5
6- 7		2.0									4.0			4.5	6.0	11.5		
7- 8	2.5			2.0		1.5				10.5				3.5	9.5			5.5
8- 9				3.5		2.5			2.0	6.0	5.0		5.0	2.5			4.5	
9-10						4.0		3.5									8.0	7.0
10-11					2.0						5.5						11.0	
11-12			1.5		3.5		2.0			11.0		9.5	7.5	10.5				8.0
12-13							3.0			6.5	6.0			10.0	9.0		4.0	
13-14				2.5						2.0				8.0	2.5	7.5	9.5	
14-15						1.5		1.5			6.5		10.0	8.5	7.0	6.0	10.5	1.5
15-16						2.5								5.5	9.5		10.5	
16-17	1.5				2.5	3.5				7.5	7.0	5.0		7.5	4.5		3.5	3.0
17-18		2.0								2.5				3.5			7.0	
18-19	2.5			1.5			2.0	3.5			8.0			6.0	2.5		10.5	4.0
19-20				3.0			3.0						2.0					
20-21									8.5	8.0	8.5			5.0			3.5	5.5
21-22					1.5					3.5				10.0	2.5	6.5		
22-23					3.0	2.5					9.0		4.5	3.5	9.0	5.5	10.0	6.5
23-24						3.5						11.0		8.0	9.0			
24-25				1.5						9.0	9.5			2.0	7.0		3.0	8.0
25-26				3.0			1.5		6.5	4.0			7.0	5.5			6.0	
26-27		1.5					3.0				10.0			4.5			9.5	9.0
27-28	1.5				2.0			3.0						3.5				1.5
28-29		2.0			3.5					9.5	11.0	6.5	9.5	2.0			2.5	10.5
29-30	2.5					2.5				5.0						2.0	5.5	2.5
30-31				2.0		3.5			4.5		11.5					5.5	9.0	11.5

AAVSO Eclipsing Binary Ephemeris for September 2022

all times in U.T.

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	RT	TW	UU	WZ	XZ	AB	AB	AD	BD	BX	DS	DS	CX	CZ	XZ	OO	OO	V342	V343	V346	SS	SS	WW
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQL	AQL	AQL	AQL	AQL	AQL	ARI	ARI	AUR
MAX	9.3	8.8	11.2	11.6	10	9.3	9.3	11.1	11.3	8.6	10.8	10.8	10.7	10.3	9.3	9.2	9.2	9	10.6	9	10.1	10.1	5.7
MIN	10.2	11	14.1	12.6	13	10.2	10.2	11.6	11.7	9.5	11.4	11.4	12	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	3	4	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	8.5				5.0	1.0	10.5			10.0		9.5		1.5		4.0		6.0	6.0	5.5		
1- 2	8.5		9.5	9.0		5.0	1.0	10.0	9.5	4.5	10.0						4.5			8.5		6.0	
2- 3				2.0	8.0	5.0	1.0	10.0	7.5	9.5	10.5		1.5	8.0	5.0		4.5		2.0		6.5		
3- 4	6.0			11.5		5.0	1.0	9.5	6.0		10.5		4.5	4.5			5.0	1.0				6.5	9.5
4- 5	12.0	11.5	8.5	4.0		4.5	0.5	9.0	4.0	5.5	11.0		7.0				5.5				7.0		
5- 6	3.0				1.0	4.5	0.5	9.0	2.5	11.0	11.0		9.5				5.5				2.5	7.5	
6- 7	9.5			6.0	9.5	4.5		8.5		1.5	11.5						6.0				7.5	3.0	
7- 8			8.0			4.5		8.0	10.0	7.0	11.5		1.5				6.5				3.0	8.0	
8- 9	6.5			8.0		4.5		8.0	8.0		12.0		4.5	9.0		0.5	6.5				8.5	3.5	10.5
9-10				1.0	3.0	4.0		7.5	6.5	3.0			7.0	5.5		1.0	7.0			2.5	4.0	9.0	
10-11	4.0		7.5	10.0	11.5	4.0		7.5	4.5	8.0			9.5	2.5		1.0	7.5				5.0	9.0	4.5
11-12	10.0			3.0		4.0	8.0	7.0	2.5							1.5	7.5		7.5	7.5	4.5	9.5	
12-13	1.0					4.0	8.0	6.5	1.0	4.0			2.0			2.0	8.0					5.0	
13-14	7.5		6.5	5.0	4.5	4.0	7.5	6.5	10.0	9.5			4.5			2.0		5.0	4.0		5.5		12.0
14-15						3.5	7.5	6.0	8.5				7.0	10.0		2.5						5.5	
15-16	4.5			7.0		3.5	7.5	5.5	6.5	5.0		1.5	10.0	6.5	1.0	3.0					6.0		
16-17	11.0		6.0			3.5	7.5	5.5	5.0	10.5		2.0		3.5		3.0						6.5	
17-18	2.0			9.0	6.5	3.5	7.5	5.0	3.0			2.0	2.0		4.0	3.5					7.0		
18-19	8.0			2.0		3.0	7.0	4.5	1.5	6.5		2.5	4.5			4.0						7.0	
19-20			5.5	11.5		3.0	7.0	4.5	10.5	11.5		2.5	7.0		7.5	4.0				1.5	7.5	2.5	
20-21	5.5			4.0		3.0	7.0	4.0	9.0	2.5		3.0	10.0			4.5				4.0	3.0	8.0	
21-22	11.5				8.0	3.0	7.0	3.5	7.0	7.5		3.0		7.5		5.0				6.5	8.0	3.5	
22-23	2.5		4.5	6.0		3.0	7.0	3.5	5.5	3.5		3.5	2.0	4.5		5.0					3.5	8.5	
23-24	9.0					2.5	6.5	3.0	3.5	3.5		3.5	4.5			5.5					9.0	4.0	
24-25				8.0	1.0	2.5	6.5	2.5	2.0	9.0		4.0	7.5			6.0		5.5			4.5	9.5	
25-26	6.0	2.0	4.0	1.0	10.0	2.5	6.5	2.5	11.0			4.0	10.0			6.0					9.5	5.0	
26-27				10.0		2.5	6.5	2.0	9.5	5.0		4.5				6.5		1.5			5.0		
27-28	3.5			3.0		2.5	6.5	1.5	7.5	10.0		4.5	2.0	8.5		7.0	0.5					5.5	
28-29	9.5		3.5		3.0	2.0	6.0	1.5	6.0			5.0	4.5	5.0		7.0	1.0				6.0		
29-30	0.5	5.0		5.0	11.5	2.0	6.0	1.0	4.0	6.0		5.0	7.5			7.5	1.5					6.0	

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	WW	AP	AP	AR	AR	CL	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	R	RT	SX
	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA	CMA	CMA
MAX	5.7	10.9	10.9	6	6	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		7.0		9.5					6.5		3.0		2.0	1.5	5.0		11.0		5.5				
1- 2		10.5					9.0				2.5	5.0	1.0		2.5		1.0					9.5	
2- 3					11.0	7.5		10.0			1.5	3.5		3.5			5.5	5.5		3.5			
3- 4			10.5								1.0	2.5		1.0	4.5		10.0		7.0				10.5
4- 5							8.0					1.5		1.5		6.0			1.5	10.5			
5- 6		10.0						6.0		3.5			4.0	3.0			5.0			5.0			
6- 7										3.0			3.0		4.0		9.0	5.0		8.5			
7- 8			10.0			7.0	7.0		9.5	2.5			1.5	5.0	1.0					3.0	12.0		
8- 9							11.0			1.5		4.5		2.0			4.0				6.5	12.0	
9-10		10.0								1.0		3.0					8.5		10.0	0.5			
10-11									5.5			2.0		4.0	0.5			4.5	4.0				
11-12			9.5				10.0				3.5	1.0	4.5	1.5	5.0		3.0				7.5		
12-13						6.5		9.0			3.0		3.5		2.5		7.5		11.0	2.0	11.5	9.0	
13-14		9.5									2.0		2.5	3.5					5.5				
14-15							9.0				1.5		1.0	1.0	4.5	4.0	2.5	4.5		9.0			
15-16			9.5					5.0			1.0	3.5		5.5	2.0		6.5			3.5			
16-17												2.5		2.5			11.0		7.0				10.5
17-18	7.0	9.0				6.0	8.0		8.5	3.5		1.5			3.5	11.5	1.5		1.0	10.5			
18-19						12.0				3.0			4.0	4.5	1.0		6.0	4.0		4.5			
19-20			9.0					11.5		2.0			3.0	2.0			10.5	12.0	8.5				
20-21							7.0			1.5			1.5		3.0		0.5		2.5	12.0	10.5		
21-22		8.5					11.5			1.0		4.5	0.5	4.0			5.0			6.0		10.5	
22-23	8.0					5.5		8.0				3.0		1.5	5.0		9.5	3.5	9.5				
23-24			8.5			11.5					3.5	2.0			2.5			11.5	4.0				
24-25			12.0				10.0		11.0		3.0	1.0	4.5	3.5		2.0	4.0			7.5			
25-26		8.5									2.0		3.5	0.5	4.5		8.5		11.0	2.0			
26-27		11.5									1.5		2.5	5.0	1.5			3.0	5.5				
27-28	9.0		8.0		6.5		9.0		7.5		1.0		1.0	2.5		9.5	3.5	11.0		9.0			
28-29			11.5			11.0						4.0					8.0			3.0			
29-30		8.0		8.0				10.5		3.5		2.5		4.5	1.0				6.5				10.5

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	TU	TZ	UU	XZ	AK	RW	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	PV	V364	V364	V375	U
	CMA	CMA	CMA	CMI	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP
MAX	9.7	9.8	10	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	10	11.2	11.2	10.1	6.7
MIN	10.7	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	9.8
DUR	4	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	3	4	4	5	4
TOT																							2
		(S)										(S)							(S)		(S)		
0- 1					10.0		6.5	9.0		6.5	1.0	5.0	5.0	3.5				9.0			11.5		
1- 2				9.5					2.5				4.0						7.0	6.0			
2- 3											6.5	3.0		4.5		3.5		3.0			0.5	4.0	
3- 4	11.5						3.0				5.5	2.0	8.5		7.0	2.5			1.0				5.5
4- 5									9.0	4.5	1.0	3.5	5.5	10.0	11.0	8.0				8.0			
5- 6				11.0				3.5			3.5	7.5									3.0	2.5	
6- 7								8.5			2.5	6.5	12.0	6.5	6.5								
7- 8			10.0						2.5	1.5	5.5	6.5	6.5					9.0		10.5			
8- 9									8.5	11.5		4.5	1.5	7.5	2.5		2.0		7.0		5.0	1.5	5.0
9-10					11.5						7.0	3.0				2.0	8.0	3.0					
10-11							5.5		4.0		6.0	2.0	10.0	8.5		6.0			1.0				
11-12								3.0		5.0	5.0	1.0	5.0	1.0		10.0						7.0	
12-13				9.5				8.0			4.0			10.0							1.5		11.5
13-14					10.5		2.0				3.0	6.5		2.0			1.5						5.0
14-15											2.0	5.5	8.0	11.0			7.5	9.0				9.0	
15-16										7.5	1.0	4.5	3.0	3.0	11.5					7.0	3.5		10.0
16-17				11.0		3.0					7.5	3.5		12.0		1.0		3.5					
17-18		12.0			9.5			2.5	10.0		6.5	2.5	11.5	4.0	7.5	5.0			1.0		11.0		
18-19								7.0		1.0	5.5	1.5	6.5			8.5	1.0				5.5		9.0
19-20								12.0	5.5	10.0	4.5		1.0	5.0	3.5		7.0						
20-21			10.0				5.0				3.0	7.0											
21-22									1.0		2.0	6.0	9.5	6.0				9.5			7.5		7.5
22-23					11.5					3.5	1.0	5.0	4.5						7.0			2.0	
23-24				9.5			1.0	2.0				4.0		7.0			0.5	3.5					4.0
24-25								6.5			6.5	3.0				3.5	6.5		1.0	9.5			6.5
25-26								11.5			5.5	2.0	8.0	8.0		7.5						4.0	
26-27					11.0				11.5	6.0	4.5	1.0	2.5			11.5							
27-28				10.5			7.5				3.5	7.5		9.0							12.0		5.0
28-29									7.0		2.5	6.5	11.5	1.5	8.5			9.5				6.5	4.0
29-30	10.0							1.5			1.5	5.5	6.0	10.0			6.0		7.0	1.0			

	BR	CG	DK	KV	V346	V387	V388	V456	V466	V466	V477	V477	V704	W	TT	TY	YY	FZ	Z	RZ	TW	UZ	UZ
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DEL	DRA	DRA	DRA	DRA	DRA
MAX	9.4	11	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	10.2	10.8	10	7.8	9.9	9.9
MIN	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	11.3	13.6	10.9	9.5	10.7	10.7
DUR	4	3	4	5	5	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5
TOT														2							1		
									(S)		(S)												(S)
0- 1	2.0	4.5	6.5			6.5	6.0	5.5		5.5			4.0			8.0	8.0		1.0	4.0	7.0		
1- 2	10.0	10.5	5.0				2.5	3.0			9.0		7.0			5.0	3.0	3.0		3.5			
2- 3		2.0	3.5	7.5		4.5			7.5			1.5	10.5			9.5			3.0	6.0			
3- 4		8.0	2.0			11.0													11.5	8.5			
4- 5	2.0		0.5		8.5	2.5				9.5			3.5	9.5			7.5	6.0		11.0			
5- 6	10.0	5.5	10.5	3.5		9.5	9.5		2.0				7.0			2.5	1.0					4.5	
6- 7			9.0			0.5	6.0				1.5		10.5						4.5	2.5			
7- 8		3.0	8.0		2.0	7.5	3.0	8.5		4.5						3.5				5.0			
8- 9	2.0	9.5	6.5					6.0					3.5			8.5	6.5	4.0		7.5		10.5	
9-10	9.5		5.0			5.5		3.5	6.5			2.5	7.0	4.5			1.5			10.0			
10-11		7.0	3.5					0.5					10.5						6.5			2.0	
11-12			2.0			3.5	10.0			8.5					7.0			7.0		1.5	9.5		
12-13	1.5	4.0	0.5			10.5	6.5		1.0				3.5				5.5	2.0		4.0			
13-14	9.5	10.5	10.5			2.0	3.0				2.5		7.0			2.5	1.0			6.5		8.0	
14-15		1.5	9.0			8.5				3.5			10.0		3.5	7.0			8.0	9.0	5.0		
15-16		8.0	8.0		7.5			9.0										5.0					
16-17	1.5		6.5			6.5		6.5	5.5			3.5	3.5				5.0				0.5		
17-18	9.5	5.5	5.0					4.0					6.5	0.5					1.5	3.0			
18-19			3.5		1.5	5.0	7.0	1.0		7.5			10.0						8.5	10.0	5.5		5.5
19-20		3.0	2.0	8.5			3.5									1.5	9.0	3.0		8.0			
20-21	1.5	9.0	1.0			3.0			9.5		3.5		3.0			6.0	4.0			10.5			
21-22	9.5		10.5			9.5				2.5			6.5						3.0				12.0
22-23		6.5	9.5	4.5		1.0							10.0					6.5	11.5	2.0			
23-24			8.0			8.0		9.5	4.5			4.5					8.0	1.0		4.5		3.0	
24-25	1.5	4.0	6.5				7.0	7.0					3.0				3.0			7.0			
25-26	9.5	10.5	5.0	0.5		6.0	3.5	4.5		6.5			6.5						5.0	9.5	10.5		
26-27		1.5	3.5		7.0			1.5					10.0			5.0		4.5				9.0	
27-28		7.5	2.0			4.0			8.5		4.5						7.5			1.0			
28-29	1.5		1.0			11.0				1.5			3.0			2.5				3.5	6.0		
29-30	9.5	5.0	10.5		1.0	2.0							6.5					7.5	6.5	6.0			

	AI	TZ	YY	YY	RW	AF	SZ	TU	UX	CC	CT	AV	SW	SW	VX	CM	CO	CO	Y	UU	UV	VZ	Z
	DRA	ERI	ERI	ERI	GEM	GEM	HER	HER	HER	HER	HER	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LEP
MAX	7.2	9.8	8.4	8.4	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	9.2	9.2	10.9	8.5	10.5	10.5	9.5	11.4	9.5	10.6	11
MIN	8.2	12.6	9.1	9.1	11.6	11.3	12	13.4	9.8	12.8	11.2	10.6	10	10	12.3	9.5	11	11	12.7	12.7	10.2	11.7	12.5
DUR	4	4	3	3	5	4	4	5	5	4	4	4	3	3	4	4	5	5	5	4	3	4	4
TOT		1			1			1															
				(S)										(S)			(S)						
0- 1								3.0					7.0	3.5									
1- 2	0.5						7.0		3.0				6.5	2.5		2.5	7.5			12.0			
2- 3	5.5			7.0			3.0						5.5	1.5				1.5			12.0		
3- 4										1.0			4.5	0.5	1.0								
4- 5						8.0			5.5		1.5		3.5	7.5	3.0	7.5	9.5						
5- 6													2.5	6.5	5.0			3.5	10.0		12.0		
6- 7			7.5				5.0						1.5	5.5	6.5								
7- 8		11.5	6.5				0.5						1.0	4.5	8.5		11.5					11.5	
8- 9	5.0												7.5	4.0	10.0			5.5			12.0		
9-10								4.5					6.5	3.0	12.0	3.0	0.5						
10-11							7.0						6.0	2.0					11.5				
11-12				7.0			3.0				5.0		5.0	1.0				7.5			12.0		
12-13													4.0			8.0	3.0						
13-14													3.0	7.0									
14-15	5.0											11.5	2.0	6.0				9.5			12.0		
15-16		7.0	7.5				5.0		1.5	4.5			1.0	5.0			5.0						
16-17			6.5				0.5							4.0									
17-18					9.5								7.0	3.5		3.5		12.0			12.0		
18-19								6.5	4.0				6.0	2.5	2.0		7.0						
19-20							7.0						5.5	1.5	4.0			1.0				11.5	
20-21	5.0			7.0		12.0	3.0				3.0		4.5	0.5	6.0	8.5					12.0		
21-22									6.0				3.5	7.5	7.5		9.0						
22-23										2.5			2.5	6.5	9.5			3.0					
23-24													1.5	5.5	11.0						12.0		
24-25			7.5				5.0						1.0	4.5			11.0						
25-26			6.5			11.5	0.5	1.5					7.5	3.5		4.0		5.0					
26-27	5.0												6.5	3.0							12.0		
27-28											11.5		5.5	2.0									
28-29		8.0					7.0						5.0	1.0		9.0		7.0					
29-30				7.0			3.0			1.0	1.5		4.0				2.0				12.0		12.0

	RR	SS	DELT	RY	UZ	EW	FL	RW	AT	BB	BO	U	SX	V508	V839	1010	EQ	ER	ER	ET	FL	FT	GU
	LEP	LIB	LIB	LYN	LYR	LYR	LYR	MON	MON	MON	MON	OPH	OPH	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI	ORI
MAX	10.2	10.4	4.8	11.9	9.8	11.2	8.7	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	12.6
MIN	10.9	11.3	5.9	13.3	11	13.6	9.5	11.9	11.4	11.3	12.1	6.5	11.2	10.7	9.4	7	13.3	10.2	10.2	12.4	13.2	9.7	13.5
DUR	4	6	7	4	5	5	4	5	5	4	5	5	5	3	3	4	4	3	3	5	3	4	4
TOT								1			1												
																				(S)			
0- 1														6.0	5.0			8.0					
1- 2																			9.5				
2- 3										10.0											7.5	9.5	
3- 4							4.0																
4- 5															1.0		8.5		8.5				11.0
5- 6				9.5			8.0							2.0	2.5		10.0				10.0		9.5
6- 7														3.0									8.0
7- 8														3.5	3.5				7.5				
8- 9	10.0				9.5			11.0						4.5			9.0			11.5			
9-10	8.0	2.0											1.0	5.5	5.0	3.5					10.5		
10-11					7.0			9.0		11.5				6.0							9.5		
11-12												1.0	2.5		6.0	3.0	8.0	8.0			8.0		
12-13					4.0										1.5				9.5	7.0			11.0
13-14						8.0				10.0						3.0							9.5
14-15							1.5	1.5						1.0	2.5			7.5					8.0
15-16				10.5		6.5								2.0		2.5			8.5				
16-17							5.5					2.0		3.0	3.5		10.0						
17-18						5.5								3.5		2.0							
18-19	11.5						10.0							4.5	4.5		7.5		8.0				
19-20	9.5					4.0					10.5			5.5		1.5		9.5			9.0		
20-21	7.5													6.0	6.0								11.0
21-22						3.0				11.5		2.5			1.5	1.5						7.0	9.5
22-23			2.5															8.5			11.5		8.0
23-24						1.5			10.0						2.5	1.0			10.0				
24-25										9.5				1.0									10.5
25-26				11.5					10.5					2.0	3.5	0.5	7.0	7.5					
26-27												3.5		3.0					9.0				
27-28					7.5		3.0		11.5					3.5	4.5								
28-29				8.5										4.5						11.0			11.0
29-30	11.5		2.0		4.5		7.0	10.5	12.0					5.0	6.0				8.0	10.0			9.5

	CC	CC	RW	RZ	TY	WY	AC	AM	EQ	EQ	V	X	RV	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	AH	
	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR	VIR
MAX	11.1	11.1	8	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	11.7	9.7	
MIN	11.7	11.7	12.5	11.2	12	11.7	12.3	12.3	11	11	11.9	12	12.5	8.9	12.4	12.4	13.8	11	11.7	11.2	11.4	13.5	10.2	
DUR	4	4	4	3	2	4	6	5	3	3	4	4	4	6	3	3	1	3	3	4	4	4	4	
TOT			1																					
		(S)								(S)						(S)							(S)	
0- 1		1.0		7.5			8.0		6.0		3.5		8.5		2.0		3.5					8.5		
1- 2		1.5				8.0			6.5		7.5		2.5		3.5					5.0	9.5			
2- 3		2.5		9.5			9.0		7.0		11.5					1.0	3.0				11.0			
3- 4		3.0		5.5		10.0			7.5		2.0		8.5			2.5				12.0				
4- 5		4.0					10.0				6.0		2.5			4.0	2.0					0.5		
5- 6				7.5	7.0	12.0				4.5	10.0	11.5			1.0			8.5	10.0			2.0		
6- 7			9.0		9.0		11.0			5.5		10.5	9.0		2.5		1.0	1.0				3.0		
7- 8				9.5	11.0					6.0	4.0	10.0	3.0		4.0			10.0				4.5		
8- 9	1.0					6.5				6.5	8.0	9.5				1.5				2.5	5.5			
9-10	1.5									7.0		8.5	9.5			3.0	4.5	11.5				6.5		
10-11	2.5			7.0		8.5				7.5	2.5	8.0	3.5								9.5	8.0		
11-12	3.0									8.0	6.5	7.5			1.5		4.0					9.0	0.5	
12-13	4.0			9.0		10.0			4.5		10.5	6.5	9.5		3.5							10.5		
13-14									5.0			6.0	4.0			0.5	3.0					11.5		
14-15						12.0			6.0		4.5	5.0				2.0								
15-16				7.0			7.0	6.5		8.5	4.5	10.0				3.5	2.5				1.5	1.0	0.5	
16-17		1.0							7.0			4.0	4.0		1.0			8.5	10.0			2.5		
17-18		1.5	10.5	8.5		6.5	8.0	7.5		3.0	3.0				2.5		1.5	1.0		7.0	3.5			
18-19		2.5			5.5				8.0		7.0	2.5	10.5		4.0			10.0				5.0		
19-20		3.0			7.5	8.5	9.0			4.5	11.0		4.5			1.0	0.5				6.0	1.5		
20-21		4.0	5.0	6.5	9.0					5.0						2.5	5.0	11.5				7.0		
21-22					11.0	10.5	10.0			6.0	5.0		11.0			4.5						8.5		
22-23				8.5						6.5	9.5		5.0	10.5	1.5		4.0					9.5		
23-24							11.0			7.0					3.0							11.0		
24-25	0.5									7.5	3.5		11.0				3.5			4.5				
25-26	1.5			6.5						8.0	7.5		5.0			2.0						0.5		
26-27	2.5				6.5			4.5		11.5						3.5	2.5			12.0	2.0		0.5	
27-28	3.0			8.0				5.0		1.5		11.5		0.5				8.5	10.0		3.0			
28-29	4.0				8.5			5.5		5.5		5.5		2.0			2.0	1.0			4.0			
29-30								6.5		10.0						3.5		10.0			5.5			

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	RT	TW	UU	WZ	XZ	AB	AB	AD	AD	BD	BX	DS	DS	RY	CX	CZ	XZ	OO	OO	V342	V343	V346	SS
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQR	AQL	AQL	AQL	AQL	AQL	AQL	ARI
MAX	9.3	8.8	11.2	11.6	10	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	10.6	9	10.1
MIN	10.2	11	14.1	12.6	13	10.2	10.2	11.6	11.6	11.7	9.5	11.4	11.4	10.1	12	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	7.0					2.0	6.0		0.5	2.0	11.5		5.5				0.5		1.5	4.0		3.0	6.5
1- 2			2.5	7.0		2.0	6.0	12.0	0.5	0.5	2.0		5.5						2.0			5.5	2.0
2- 3	4.0				4.5	2.0	6.0	12.0		9.5	7.0		6.0		2.0		3.5		2.5				7.5
3- 4	10.5	8.0		9.0		1.5	5.5	11.5		8.0			6.0		5.0				2.5				3.0
4- 5	1.5		2.0	2.0		1.5	5.5	11.0		6.0	3.0		6.5		7.5	6.0			3.0				8.0
5- 6	7.5			11.5		1.5	5.5	11.0		4.5	8.5		6.5			3.0			3.5				3.5
6- 7				4.0	6.5	1.5	5.5	10.5		2.5			7.0						3.5				8.5
7- 8	5.0	11.0	1.5			1.5	5.0	10.0		1.0	4.5		7.0		2.0				4.0		3.5		4.0
8- 9	11.0			6.0		1.0	5.0	10.0		10.0	9.5		7.5		5.0				4.5				9.5
9-10	2.0					1.0	5.0	9.5		8.5	0.5		7.5		7.5				4.5				5.0
10-11	8.5		0.5	8.0	8.0	1.0	5.0	9.0		6.5	5.5		8.0			7.0			5.0			2.0	
11-12				1.0		1.0	5.0	9.0		5.0	11.0		8.0			4.0			5.5			4.5	5.5
12-13	5.5			10.0		0.5	4.5	8.5		3.0	1.5		8.5		2.5	0.5			5.5				1.0
13-14	12.0		0.0	3.0	1.5	0.5	4.5	8.0		1.5	7.0		8.5		5.0				6.0				6.5
14-15	3.0		12.0	12.5	10.0	0.5	4.5	8.0		10.5	12.0		9.0		7.5			0.0					2.0
15-16	9.0			5.0		0.5	4.5	7.5		9.0	2.5		9.0	6.0				0.5					7.0
16-17	0.0					0.5	4.5	7.0		7.0	8.0		9.5			8.0		1.0					2.5
17-18	6.5		11.0	7.0	3.0	0.0	4.0	7.0		5.5			9.5	5.0	2.5	4.5	3.0	1.0		3.0			8.0
18-19					11.5	0.0	4.0	6.5		3.5	4.0		10.0		5.0	1.5		1.5			5.0		3.5
19-20	3.5			9.0		0.0	4.0	6.0		1.5	9.0		10.0	4.5	8.0			2.0					8.5
20-21	10.0		10.5	2.0		8.0	4.0	6.0		11.0			10.5					2.0			1.0	1.0	4.0
21-22	1.0			11.5	4.5	8.0	4.0	5.5		9.0	5.0		10.5	3.5				2.5				3.5	9.0
22-23	7.0			4.0		7.5	3.5	5.0		7.5	10.5		11.0		2.5			3.0				6.0	4.5
23-24			10.0			7.5	3.5	5.0		5.5	1.0		11.0	3.0	5.0	5.5		3.0					
24-25	4.5			6.0		7.5	3.5	4.5		4.0	6.5		11.5		8.0	2.5		3.5					5.5
25-26	10.5				6.5	7.5	3.5	4.0		2.0	11.5		11.5	2.0				4.0					1.0
26-27	1.5		9.0	8.0		7.5	3.5	4.0		0.5	2.5		12.0					4.0					6.0
27-28	8.0			1.0		7.0	3.0	3.5		9.5	7.5	0.0	12.0	1.0	2.5			4.5					1.5
28-29		2.0		10.0		7.0	3.0	3.0		8.0		0.5			5.5			4.5					7.0
29-30	5.0		8.5	3.0	8.0	7.0	3.0	3.0		6.0	3.5	0.5		0.5	8.0	6.5		5.0					2.5
30-31	11.5			12.5		7.0	3.0	2.5		4.5	9.0	1.0				3.5		5.5					7.5

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	SS	WW	WW	AP	AP	AR	AR	CL	EP	HP	HP	TU	TU	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	R
	ARI	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA
MAX	10.1	5.7	5.7	10.9	10.9	6	6	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
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	12.4	9.4	11.3	11.8	11.8	6.8
DUR	3	5	5	4	4	5	5	4	3	3	3	3	3	3	3	3	3	6	3	5	5	5	4
TOT	(S)		(S)		(S)		(S)			(S)		(S)		(S)		(S)						(S)	
0- 1	1.5			11.5					8.0		4.0				1.5	(S)	2.0		2.5	3.0	1.0	10.0	
1- 2	7.0				8.0		10.0		12.5						0.5		3.0		7.0	10.5		4.5	
2- 3	2.5		10.5		11.0			4.5		7.0		1.5					0.5		11.5		8.0		
3- 4	7.5			7.5		11.5		10.0	7.0			1.0			2.0	1.0			1.5		2.5	11.5	
4- 5	3.0			11.0					11.5		10.0	0.0			0.5		2.0		6.0	2.5		6.0	
5- 6	8.5				7.5					3.5							3.0		10.5	10.5	9.5	0.0	
6- 7	4.0	5.5			11.0				6.0						2.0		0.5		1.0		3.5		8.0
7- 8	9.0		11.5	7.5				4.0	10.5		6.5				1.0			1.5	7.5	5.5		7.0	11.5
8- 9	4.5			10.5				9.5					1.5				2.5		10.0	2.0	11.0	1.5	
9-10					7.0				5.0	9.5			1.0				2.5		0.0	10.0	5.0		
10-11	5.5				10.5				9.0		3.0		0.0				1.0		4.5			8.5	
11-12	1.0	6.5		7.0													0.0	2.0	9.0		12.0	3.0	
12-13	6.0			10.5				3.5		6.0					2.5			3.0		2.0	6.5		
13-14	1.5				7.0			9.0	8.0						1.5			0.0	3.5	9.5	1.0	10.0	
14-15	6.5				10.0						9.5	1.5			0.5		1.0		8.0			4.5	
15-16	2.0			6.5								1.0						2.0			8.0	10.5	
16-17	7.5	7.5		10.0					7.0			0.0					2.0	3.0		3.0	1.5	2.0	11.5
17-18	3.0				6.5				11.5		5.5				0.5	0.5		5.5	7.5	9.5		5.5	
18-19	8.0				10.0			8.5										1.5	12.0		9.0	0.0	
19-20	3.5			6.5					6.0	9.0					2.0			2.5		2.0	3.5		
20-21	9.0			9.5					10.5				1.5	1.0				3.5		6.5	1.0	7.0	
21-22	4.5	9.0			6.0						12.0		1.0					0.5	11.0	9.0	10.5	1.5	
22-23	9.5				9.5				5.0	5.0			0.0					2.5	1.5		5.0		
23-24	5.0			6.0				8.0	9.0						1.5			2.5		5.5		8.5	9.0
24-25	0.5			9.5		3.5					8.5				0.0			0.0	10.0	0.5	12.0	2.5	12.5
25-26	6.0				6.0													3.0	1.0	0.5	8.5	6.0	
26-27	1.5	10.0			9.0		5.0		8.0	11.5		1.5			1.5				2.0		0.5	10.0	
27-28	6.5			5.5							4.5	1.0			0.5			3.0	3.5	9.5		4.0	
28-29	2.0			9.0		7.0		7.5				0.0							0.5		7.5		
29-30	7.0			12.5	5.5				7.0	8.0								2.0		4.0	8.0	2.0	11.0
30-31	2.5		5.0		9.0		8.5		11.5						1.0	2.0		10.5	8.5			5.5	

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	RT	SX	TU	TZ	TZ	UU	XZ	AK	RW	TY	RZ	TV	AB	CW	CW	DZ	IR	IS	MM	OR	PV	PV	V364
	CMA	CMA	CMA	CMA	CMA	CMA	CMI	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS
MAX	11.4	10.3	9.7	9.8	9.8	10	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	10	11.2
MIN	12.9	11.4	10.7	10.5	10.5	12.5	10.2	11.5	10.8	11.6	7.8	8.4	12.2	12.5	12.5	12.3	12.1	12.6	11.9	12.4	10.6	10.6	11.7
DUR	5	4	4	4	4	5	3	4	5	4	4	4	4	3	3	4	4	5	5	4	3	3	4
TOT																							
					(S)										(S)								(S)
0- 1	11.5						8.0	10.0		4.0	6.0	2.5	8.5	0.5	4.5	1.0	2.5	5.0		12.0	3.5		
1- 2							12.0				11.0			7.0	3.0		11.0		2.5			1.0	
2- 3														6.0	2.0	9.5	3.5	1.0	6.5				3.0
3- 4						10.0			2.0	0.0			2.0	5.0	1.0	4.5	12.0		10.0				
4- 5	9.0						9.5	9.0					11.0	4.0	0.0		4.5			5.5			
5- 6								12.0			1.0			3.0	6.5					11.5	9.5		5.0
6- 7											5.5			2.0	5.5	7.5	5.5					7.0	
7- 8											10.0	8.5	4.5	1.0	4.5	2.5					3.5		
8- 9			10.5	11.5			10.5	8.0						7.5	3.5		6.5		1.5			1.0	7.0
9-10								11.0				4.0		6.5	2.5	11.0		10.0	5.0	5.5			
10-11					10.5					3.0				5.5	1.5	6.0	7.5		9.0	11.0			
11-12							8.0				0.0		7.0	4.5	0.5	0.5		6.0					9.0
12-13		10.5					12.0				5.0			3.5	7.0		8.5				9.5		
13-14	10.0							10.0			9.5			2.0	6.0	9.0	1.0	2.0				7.0	
14-15													0.5	1.0	5.0	4.0	9.5			5.0	3.5		11.0
15-16							9.5						9.0	0.0	4.0		2.0		0.0	11.0		1.0	
16-17			8.0			10.0					10.0			7.0	3.0		10.5		4.0				0.0
17-18	7.5		11.5					9.5						5.5	2.0	7.5	3.0		7.5				
18-19								12.5			4.5	5.5	3.0	4.5	1.0	2.0	11.5		11.5				
19-20							10.5				9.0	11.5	3.5	7.5		4.0				4.5	9.5		2.0
20-21									1.0	2.0		1.0		2.5	6.5	10.5		11.0		10.5		7.0	
21-22								8.5						1.5	5.5	5.5	5.0				3.5		
22-23	11.5						8.0	11.5					5.0	0.5	4.5	0.5		7.0				1.0	4.5
23-24							12.0							7.0	3.5		6.0		3.0				
24-25											4.0			6.0	2.0	9.0		3.5	6.5	4.0			
25-26		10.0	8.5					7.5			8.5	11.5		5.0	1.0	3.5	7.0		10.5	10.0			6.5
26-27	8.5		12.0				9.5	10.5					7.5	4.0	0.0						9.5		
27-28									5.0		7.0			3.0	7.0	12.0	8.0					7.5	
28-29														2.0	5.5	7.0	0.5				3.5		8.5
29-30						10.0					2.5	1.5	1.0	4.5	2.0	9.0				3.5		1.5	
30-31							10.5	9.5		1.5	3.0		10.0	7.5	3.5		1.5		1.5	9.5			

	V364	V375	U	SU	WZ	WZ	XX	DK	DL	DV	EG	SS	U	RW	V	Y	SW	WW	ZZ	AE	BR	CG	DK	
	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CET	CRB	CRB	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	
MAX	11.2	10.1	6.7	8.8	11.7	11.7	8.5	12.2	12.4	11.6	9.6	9.4	7.6	10.1	9.5	7	9.3	9.9	10.7	11.8	9.4	11	10.3	
MIN	11.7	10.9	9.8	9.8	11.3	11.1	9.6	14.2	13.2	12.4	10.6	13	8.8	10.6	10.2	7.6	11.8	13.2	12	12.8	10.5	11.8	10.8	
DUR	4	5	4	4	3	3	4	4	5	4	3	5	5	4	4	6	5	5	4	4	4	3	4	
TOT			2									2					2							
	(S)					(S)																		
0- 1		3.5		11.5	1.0	6.0					12.0						1.5		8.5	8.0			9.5	
1- 2	8.5			9.5	7.0	2.0	8.0				1.0					3.5				7.0		2.5	8.0	
2- 3				7.0	3.0	8.0					3.0			3.0					5.5	6.5	1.5		6.5	
3- 4		2.5	3.5	4.5	9.0	4.0			3.5		5.5							4.0		5.5		0.0	5.0	
4- 5	10.5			2.0	5.0	10.0				3.5	7.5					3.5				3.0	5.0		6.5	3.5
5- 6					1.0	6.0					7.5	9.5		1.0						9.0	4.0			2.5
6- 7		1.0			7.0	2.0	0.0		10.0	11.0	11.5									0.0	3.5	1.5	4.0	1.0
7- 8					3.0	8.0					1.0					3.0				6.5	2.5			
8- 9			3.0		9.0	4.0	8.0		1.0		3.0									2.0		1.0	9.5	
9-10	1.5			12.0	5.0	0.0					5.0						5.0		3.5	1.5		7.5	8.0	
10-11		11.5		9.5	1.0	6.0		12.5			7.0			3.0		3.0				0.5	1.5		6.5	
11-12				7.0	7.5	2.5		12.0	7.5	2.5	9.5									1.0		5.0	5.0	
12-13	3.5			5.0	3.5	8.5		11.5		6.5	11.5									7.0			3.5	
13-14		10.0	3.0	2.5	9.5	4.5	0.5	11.5		10.5	0.5	12.5		0.5		3.0		3.0				2.5	2.5	
14-15				0.0	5.5	0.5		11.0			2.5									4.5	1.5	8.5	1.0	
15-16	5.5				1.5	6.5	8.5	10.5			5.0													
16-17		8.5			7.5	2.5		10.0	4.5		7.0	11.5	2.0		12.0	3.0				1.5		6.0	9.5	
17-18					3.5	8.5		10.0			9.0									8.0			8.0	
18-19	7.5		2.5		9.5	4.5		9.5		2.0	11.5			2.5			8.5				1.0	3.5	6.5	
19-20		7.5		10.0	5.5	0.5		9.0	11.0	6.0	0.5	11.0				3.0				5.0			5.0	
20-21				7.5	1.5	6.5	0.5	9.0		10.0	2.5											1.0	4.0	
21-22	10.0			5.0	7.5	2.5		8.5	2.0		4.5			0.5						2.5		7.5	2.5	
22-23		6.0		3.0	4.0	9.0	9.0	8.0			7.0	10.5				3.0				8.5	1.0		1.0	
23-24			2.0	0.5	10.0	5.0		8.0			9.0							2.0				5.0		
24-25	12.0				6.0	1.0		7.5	8.5		11.0									5.5			9.5	
25-26		5.0			2.0	7.0		7.0		1.5	0.0	10.0				2.5						2.0	8.0	
26-27	1.0				8.0	3.0		7.0		5.5	2.5			2.5						3.0	1.0	8.5	6.5	
27-28					4.0	9.0	1.0	6.5		9.0	4.5									9.0			5.0	
28-29		3.5	2.0	10.5	0.0	5.0		6.0			6.5	9.0				2.5				0.0		6.0	4.0	
29-30	3.0			8.0	6.0	1.0	9.0	6.0	6.0		8.5			0.0						6.5			2.5	
30-31				5.5	2.0	7.0		5.5			11.0										1.0	3.5	1.0	

	KV	V346	V387	V388	V456	V466	V466	V477	V477	V704	W	TT	TY	YY	FZ	Z	RZ	TW	UZ	UZ	AI	TZ	YY
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DEL	DRA	DRA	DRA	DRA	DRA	DRA	ERI	ERI
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	10.2	10.8	10	7.8	9.9	9.9	7.2	9.8	8.4
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	11.3	13.6	10.9	9.5	10.7	10.7	8.2	12.6	9.1
DUR	5	5	3	3	3	4	4	4	4	4	7	5	4	4	3	4	3	5	5	5	4	4	3
TOT											2							1				1	
							(S)		(S)											(S)			
0- 1			9.0	7.5		3.5			5.5	10.0				2.5		8.5							
1- 2			0.0	4.0									6.5				1.0		6.5				
2- 3			7.0	0.5	7.5		5.5			3.0			4.0	1.5							4.5		
3- 4					5.0					6.0	5.5				5.5	8.0	2.5						7.5
4- 5			5.0		2.0	7.5		5.5		9.5		6.0			0.5		5.0						6.5
5- 6							0.0						5.5				7.5						6.0
6- 7			3.0	7.5						2.5			1.0		1.5				4.0				5.0
7- 8		6.5		4.5		2.5			6.5	6.0		3.0			3.5	10.0							
8- 9			1.5	1.0						9.5	1.0		3.0				1.5				4.5		
9-10	5.5		8.0				4.5					7.5	5.0				4.0	11.0	10.5				
10-11		0.0			8.0					2.5					6.5	3.0	6.5						
11-12			6.0		5.5	6.5		6.5		6.0					1.5	11.5	8.5			1.5		8.5	
12-13	1.5			8.0	2.5					9.5								6.5					7.5
13-14			4.5	4.5	0.0								4.0				0.5						6.5
14-15				1.5		1.5			7.5	2.5			2.0		4.5	5.0	3.0			7.5	4.5		6.0
15-16			2.5							6.0			6.5				5.5	2.0					5.0
16-17			9.0				3.5			9.5							7.5						
17-18			0.5										3.0										
18-19		6.0	7.5		8.5	5.5		7.5		2.5				2.5	6.5								
19-20				5.0	6.0				0.0	6.0							2.0		5.0				
20-21			5.5	1.5	3.0		7.5			9.0			1.0				4.5				4.0		
21-22					0.5	0.5							5.5	2.5	6.0		6.5						7.5
22-23			3.5							2.0					0.5	8.5	9.0		11.5				7.0
23-24							2.5	0.0		5.5								12.0					6.0
24-25			1.5							9.0				6.5			1.0			2.5		9.0	5.0
25-26			8.5	5.5		4.5							1.5	4.0	1.5	3.5							
26-27	6.0			2.0					1.0	2.0						10.0	5.5	7.5			4.0		
27-28			6.5		6.5		6.5			5.5	6.0	5.5	4.5				8.0			9.0			
28-29					3.5					9.0				5.5	7.0								
29-30	2.0	5.0	4.5		1.0								1.0	2.0	3.0			3.0					
30-31							1.5	1.0		2.0		2.0				12.0	2.5						7.5

	SS	DELT	RY	UZ	EW	FL	RU	RU	RW	BB	BO	U	SX	V508	V839	EQ	ER	ER	ET	FL	FT	FZ	FZ
	LIB	LIB	LYN	LYR	LYR	LYR	MON	MON	MON	MON	MON	OPH	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI	ORI	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	10.1	8.8	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7
MIN	11.3	5.9	13.3	11	13.6	9.5	11.3	11.3	11.9	11.3	12.1	6.5	11.2	10.7	9.4	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	3	4	3	3	5	3	4	3	3
TOT									1		1												
									(S)								(S)						(S)
0- 1															1.5		9.5		8.5	5.5			5.0
1- 2				2.0					8.0								6.0		7.5			5.0	
2- 3										11.0						2.5	7.0		7.0	6.5			5.0
3- 4									6.0					0.5			8.5		5.0	8.0			5.0
4- 5								10.5						1.0	3.5			10.0					5.0
5- 6										9.5				2.0				6.5					5.0
6- 7														2.5			7.5			10.5			5.0
7- 8														3.5	0.5			9.0					5.0
8- 9			9.5			0.5				8.0				4.5				5.5					5.0
9-10											11.0				1.5	6.5	7.0						5.0
10-11						4.5	10.5											8.5					5.0
11-12			6.5														9.5						5.0
12-13													1.5				6.0						5.0
13-14										11.0				0.0	3.5			7.5			8.5	5.0	
14-15														1.0		12.0	9.0						5.0
15-16	0.5													2.0									5.0
16-17				5.0						9.0				2.5	0.0	6.0		6.5			12.0		5.0
17-18														3.5			8.0		11.5	7.0			5.0
18-19			10.5	2.5					12.0		9.0			4.5	1.5			9.5	10.5				5.0
19-20										7.5								5.5	9.0				5.0
20-21									9.5						2.5		7.0		8.0	9.5			5.0
21-22			7.5		2.0					12.5						12.0		8.5	6.5				5.0
22-23								8.5	7.5						3.5		10.0		5.5				5.0
23-24						6.5								0.0		5.5	6.0			12.0			5.0
24-25					6.0					10.5				1.0	4.5			7.5					5.0
25-26														2.0	0.0		9.0						5.0
26-27					4.5									2.5									5.0
27-28		0.0								9.0				3.5	1.5			7.0					5.0
28-29			11.5		3.5		9.0					0.5		4.5		11.5	8.0						5.0
29-30											12.0				2.5			9.5					5.0
30-31					2.5					7.5							5.5	6.0					5.0

	GU	GU	U	U	TY	AQ	BB	BB	BX	DI	GP	Z	RT	RV	ST	XZ	BETA	Y	UZ	UZ	U	V505	1968
	ORI	ORI	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PER	PER	PER	PER	PER	PER	PSC	PUP	PUP	SGE	SGR	SGR
MAX	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	9.7	9.7	6.4	6.4	12.3
MIN	13.5	13.5	10.5	10.5	12.6	13	11.2	11.2	11.5	10.8	11	12.4	12	12.7	13.2	12.7	3.5	12	10.6	10.3	9.1	7.6	13.3
DUR	4	4	3	3	6	12	3	3	3	2	4	6	4	8	5	4	8	7	4	4	6	5	4
TOT						4						2			1						2		
		(S)		(S)				(S)												(S)			
0- 1	8.0		3.0	7.5			4.0	8.5	3.5	0.5			4.5	6.0		4.5							
1- 2	7.0		6.0	1.5			6.0	1.5	6.5				1.0		7.5	8.5	9.5	6.0	11.0		5.0		
2- 3	5.5	11.0	9.0	4.5			8.0	3.5	2.5	4.0				5.0		12.0							1.0
3- 4		9.5	3.0	7.5			1.5	6.0	5.5											10.5		0.5	
4- 5		8.0	6.0	1.5			3.5	8.0	1.5	7.0	10.5		10.5	4.5			6.0					5.0	
5- 6		7.0	9.0	4.5			5.5	1.0	4.5	0.0	10.0		7.0					0.5	10.5				
6- 7	11.0	5.5	3.0	7.5			7.5	3.0	1.0		9.0		3.0	4.0									
7- 8	9.5		6.0	1.5		5.0	1.0	5.0	4.0	3.5	8.5					2.5	3.0			10.0			3.0
8- 9	8.0		9.0	4.5			3.0	7.0	6.5		8.0			3.5		6.0							
9-10	7.0		3.0	7.5			5.0	0.5	3.0	6.5	7.5				6.0	10.0				9.5			
10-11	5.5	11.0	6.0	1.5			7.0	2.5	6.0		7.0		9.0	2.5								3.0	
11-12		9.5	9.0	4.5			0.5	4.5	2.0	10.0	6.5	1.0	5.5							9.5			1.5
12-13		8.0	3.0	7.5			2.5	6.5	5.0	3.0	5.5		2.0	2.0									
13-14		7.0	5.5	1.0			4.5	0.0	1.0		5.0									9.0			
14-15	11.0	5.5	8.5	4.0			6.5	2.0	4.0	6.5	4.5	2.5											
15-16	9.5		2.5	7.0			8.5	4.0	0.0		4.0		11.5			4.0					8.5		0.0
16-17	8.0		5.5	1.0			2.0	6.0	3.0	9.5	3.5		8.0			7.5		7.5				1.0	
17-18	7.0		8.5	4.0			4.0	8.0	6.0	2.5	3.0	4.0	4.0		4.5	11.0				8.5			
18-19	5.5	11.0	2.5	7.0		7.0	6.0	1.5	2.0		2.0		0.5									3.0	
19-20		9.5	5.5	1.0			8.0	3.5	5.0	6.0	1.5												
20-21		8.5	8.5	4.0	0.5		1.0	5.5	1.5		1.0	5.0						2.0					2.0
21-22		7.0	2.5	7.0			3.0	7.5	4.5	9.0	0.5		10.0				11.0						
22-23	11.0	5.5	5.5	1.0			5.5	1.0	0.5	2.0			6.5		12.0	2.0					12.5		
23-24	9.5		8.5	4.0	2.5		7.5	3.0	3.5			6.5	3.0			5.5						3.0	
24-25	8.5		2.5	7.0			0.5	5.0	6.5	5.5						9.0	8.0			12.0			0.5
25-26	7.0		5.5	1.0			2.5	7.0	2.5						3.5								
26-27	5.5	11.0	8.5	4.0	4.5		4.5	0.5	5.5	8.5		8.0									12.0		
27-28		9.5	2.5	7.0			6.5	2.5	1.5	2.0			9.0				5.0						
28-29		8.5	5.5	1.0			0.0	4.5	4.5				5.0						11.5		6.0		
29-30		7.0	8.5	4.0	7.0		2.0	6.5	0.5	5.0		9.5	1.5									1.0	2.0
30-31	11.0	5.5	2.5	7.0			4.0	8.5	3.5						10.5	3.5	1.5				11.0		

	AO	CC	CC	RW	RZ	TY	WY	AC	AM	EQ	EQ	V	X	RV	W	TY	TY	UX	VV	XZ	ZZ	RU	AG
	SER	SER	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR
MAX	10.6	11.1	11.1	8	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
MIN	12.1	11.7	11.7	12.5	11.2	12	11.7	12.3	12.3	11	11	11.9	12	12.5	9.9	12.4	12.4	13.8	11	11.7	11.2	11.4	9.4
DUR	4	4	4	4	3	2	4	6	5	3	3	4	4	4	3	3	3	1	3	3	4	4	4
TOT				1																			
			(S)							(S)							(S)						
0- 1					6.0		10.5			7.0	3.0			12.0	6.5		1.0	1.0				6.5	
1- 2				7.0		4.0				7.5	3.5	4.0		6.0	6.5				11.5		2.0	8.0	
2- 3			0.5		8.0	5.5	12.5			8.0	4.0	8.0			6.5	8.5		0.0		7.0		9.0	
3- 4			1.5		4.0	7.5	5.0				4.5	12.0		12.0	6.5	1.5					9.5	10.0	
4- 5			2.5		9.5	9.5					5.0	2.0		6.5	6.5				5.5			11.5	11.5
5- 6					5.5	11.0	7.0				5.5	6.5		0.5	7.0		0.0						
6- 7											6.0	10.5			7.0		1.5		7.0			1.0	
7- 8	0.5				7.5		8.5			2.5	7.0	0.5		6.5	7.0			3.0				2.5	
8- 9					3.5					3.5	7.5	4.5	12.0	0.5	7.0	0.5			8.5	10.0		3.5	
9-10					9.5		10.5			4.0	8.0	8.5	11.5		7.0	2.0						5.0	
10-11		0.5			5.5					4.5			11.0	7.0	7.0		8.0		10.0		7.0	6.0	
11-12		1.5					12.5	5.0		5.0		2.5	10.0	1.0	7.0		1.0	1.5				7.0	
12-13		2.0		8.5	7.5		5.0			5.5		7.0	9.5		7.0				11.5			8.5	
13-14								6.0		6.0		11.0	8.5	7.5	7.0	8.0		0.5		7.0		9.5	11.5
14-15	1.5				9.0		7.0			6.5	2.5	1.0	8.0	1.5	7.0	1.0						11.0	
15-16				3.0	5.0	4.0		7.0		7.5	3.0	5.0	7.5		7.0				5.0			12.0	
16-17						6.0	9.0			8.0	4.0	9.0	6.5	7.5	7.0		8.5					0.5	
17-18					7.0	7.5		8.0			4.5		6.0	2.0	7.0		1.5		6.5		4.5	1.5	
18-19			0.5			9.5	10.5				5.0	3.0	5.5		7.0							3.0	
19-20			1.5		9.0	11.5		9.0			5.5	7.5	4.5	8.0	7.0	0.0			8.0	10.0	11.5	4.0	
20-21			2.0		5.0						6.0	11.5	4.0	2.0	7.0	2.0		2.5				5.5	
21-22	2.0						5.0	10.0		2.5	6.5	1.5	3.0		7.0				9.5			6.5	
22-23					6.5					3.0	7.5	5.5	2.5	8.5	7.0		0.5	1.5				7.5	11.5
23-24				10.5			7.0	11.0		4.0	8.0	9.5	2.0	2.5	7.0		2.0		11.0			9.0	
24-25					8.5					4.5			1.0		7.0	8.0		1.0		7.0	2.0	10.0	
25-26					4.5		9.0	12.0		5.0		4.0	0.5	8.5	7.0	1.0						11.5	
26-27		0.5		5.0						5.5		8.0		3.0	7.0			0.0	5.0		9.0		
27-28		1.5			6.5		11.0			6.0		12.0			7.0		8.0					1.0	
28-29		2.0							5.0	6.5	2.5	2.0		9.0	7.5		1.0		6.5			2.5	
29-30	0.0				8.5	4.0				7.0	3.0	6.0		3.0	7.5							3.5	
30-31					4.5	6.0	5.5		6.0	8.0	3.5	10.0			7.5	0.0			8.0	10.0		4.5	

AAVSO Eclipsing Binary Ephemeris for October 2022

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all times in U.T.

	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	11	9.9	10.4	11	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						1.5		1.0	2.5	6.0
1- 2	2.0	6.5		1.0				4.5	6.0	
2- 3		2.0				0.0		7.5		7.0
3- 4					2.0		6.5			
4- 5							5.0		2.0	
5- 6		7.5					4.0		5.5	1.0
6- 7	0.0	2.5			4.5		3.0			
7- 8							1.5			2.0
8- 9				7.0			0.5	0.5	1.5	
9-10					7.0			4.0	5.0	3.5
10-11		3.5						7.5		
11-12										4.5
12-13									1.0	
13-14				2.5			6.0		4.5	6.0
14-15		4.0	0.5				5.0		8.0	
15-16							4.0			7.0
16-17			1.0				2.5	0.5	1.0	
17-18					1.0		1.5	3.5	4.0	
18-19	6.5	5.0	1.5				0.5	7.0	7.5	0.5
19-20		0.5								
20-21			2.5		3.5				0.5	2.0
21-22									3.5	
22-23		6.0	3.0						7.0	3.0
23-24	4.5	1.0			6.0		6.0			
24-25			3.5				5.0	0.0	0.0	4.5
25-26				4.0			4.0	3.5	3.5	
26-27		6.5	4.0				2.5	7.0	6.5	5.5
27-28		2.0					1.5			
28-29	2.5		4.5				0.5			7.0
29-30						6.0			3.0	
30-31		7.5	5.5						6.0	

	RT	TW	UU	WZ	XZ	AB	AB	AD	AD	BD	BX	DS	CX	CZ	XZ	OO	OO	V342	V343	V346	SS	SS	WW
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQL	AQL	AQL	AQL	AQL	AQL	ARI	ARI	AUR
MAX	9.3	8.8	11.2	11.6	10	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	10.6	9	10.1	10.1	5.7
MIN	10.2	11	14.1	12.6	13	10.2	10.2	11.6	11.6	11.7	9.5	11.4	12	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			5.0		6.5	3.0	2.0		2.5		1.0		0.0					3.0	2.5	3.0	8.0	11.5
1- 2	8.5	4.5	8.0		1.5	6.5	2.5	2.0		1.0	4.5	1.5	2.5		2.5						8.5	3.5	
2- 3				7.0	10.0	6.5	2.5	1.5		10.0	10.0	1.5	5.5			0.5					4.0	8.5	
3- 4	6.0					6.5	2.5	1.0		8.5	0.5	2.0				0.5	2.0				9.0	4.0	
4- 5			7.0	9.0		6.5	2.5	1.0		6.5	6.0	2.0				1.0					4.5	9.5	
5- 6	3.0	7.5		2.0	3.0	6.0	2.0	0.5		4.5	11.0	2.5	0.0	4.5		1.5					9.5	5.0	12.5
6- 7	9.5				11.5	6.0	2.0	0.0		3.0	2.0	2.5	3.0	1.0		1.5					5.0	0.5	
7- 8	0.5		6.5	4.0		6.0	2.0			1.0	7.0	3.0	5.5			2.0					0.5	5.5	
8- 9	6.5					6.0	2.0				12.5	3.0				2.0					6.0	1.0	
9-10				6.0	5.0	6.0	2.0			8.5	3.0	3.5				2.5					1.5	6.5	
10-11	4.0		6.0			5.5	1.5			7.0	8.5	3.5	0.0			3.0				1.5	6.5	2.0	
11-12	10.0			8.0		5.5	1.5	10.5	5.0		4.0	3.0	5.0			3.0				4.0	2.0	7.0	
12-13	1.5			1.0		5.5	1.5	10.0	3.5	4.5	4.0	5.5	2.0			3.5					7.5	2.5	
13-14	7.5		5.0	10.0	6.5	5.5	1.5	9.5	1.5	9.5	4.5					4.0		0.5			3.0	7.5	
14-15				3.0		5.5	1.5	9.5		0.0	4.5					4.0					8.0	3.0	
15-16	5.0					5.0	1.0	9.0	9.0	5.5	5.0	0.5									3.5	8.5	
16-17			4.5	5.0		5.0	1.0	8.5	7.5	11.0	5.0	3.0		1.5							9.0	4.0	
17-18	2.0				8.0	5.0	1.0	8.5	5.5	1.5	5.5	5.5	6.0								4.5	9.0	
18-19	8.0			7.0		5.0	1.0	8.0	4.0	6.5	5.5		3.0								9.5	4.5	3.5
19-20			4.0			5.0	1.0	7.5	2.0	12.0	6.0										5.0	0.0	
20-21	5.5			9.0	1.5	4.5	0.5	7.5	0.5	2.5	6.0	0.5			0.0		1.0		0.5	0.5	0.5	5.5	
21-22				2.0	10.0	4.5	0.5	7.0	9.5	8.0	6.5	3.0			0.5					3.0	5.5	1.0	
22-23	3.0		3.0			4.5	0.5	6.5	8.0		6.5	5.5			0.5						1.0	6.0	
23-24	9.0			4.0		4.5	0.5	6.5	6.0	4.0	7.0				1.0						6.5	1.5	4.5
24-25	0.0				3.0	4.0	0.5	6.0	4.0	9.0	7.0			4.0		1.5			2.5		2.0	7.0	
25-26	6.5		2.5	6.0	11.5	4.0	0.0	5.5	2.5		7.5	0.5	0.5		1.5						7.0	2.5	
26-27						4.0	0.0	5.5	0.5	5.0	7.5	3.0			2.0						2.5	7.5	
27-28	3.5			8.0		4.0	8.0	5.0	10.0	10.5	8.0	6.0			2.5						8.0	3.0	
28-29	9.5		2.0	1.0	5.0	4.0	8.0	4.5	8.0	1.0	8.0				2.5						3.5	8.0	6.0
29-30	1.0			10.5		3.5	7.5	4.5	6.5	6.5	8.5				3.0						8.5	3.5	

	WW	AP	AP	AR	AR	CL	EP	HP	HP	TY	TY	TZ	TZ	Y	SV	AL	CD	CD	R	RT	SX	TU	TZ
	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMA	CMA	CMA	CMA	CMA
MAX	5.7	10.9	10.9	6	6	11.7	10.8	10.8	10.8	11.8	11.8	10.6	10.6	10.6	8.6	10.5	11.6	11.6	6.2	11.4	10.3	9.7	9.8
MIN	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	12.4	9.4	11.3	11.8	11.8	6.8	12.9	11.4	10.7	10.5
DUR	5	4	4	5	5	4	3	3	3	3	3	3	3	6	3	5	5	5	4	5	4	4	4
TOT	(S)		(S)		(S)			(S)		(S)		(S)					(S)						
0- 1		5.5	12.0						11.0						13.0		9.0		8.0	13.0			10.0
1- 2		8.5		10.0		1.0	6.0	4.0				0.5			3.0		3.5	12.5	11.5				
2- 3		12.0	5.0			7.0	10.5								7.5	8.0		7.0				6.0	
3- 4			8.5		11.5	13.0			7.5						12.0		10.5	1.0				9.5	
4- 5	6.0	5.0	12.0				5.0								2.5		4.5		10.0			12.5	
5- 6		8.5					9.5	10.5				1.0			7.0				8.0				
6- 7		11.5	5.0						3.5		0.0			1.5	11.5	7.5	11.5	2.5					
7- 8			8.0			6.5	4.0								1.5		6.0				10.0		
8- 9		4.5	11.5			12.5	8.0	7.0				0.0			6.0		0.5	9.5	7.0	7.0			
9-10	7.5	8.0					12.5			0.5			1.0	8.5	10.5			4.0	10.0				
10-11		11.5	4.5				3.0		10.0						0.5	7.0	7.5						
11-12			8.0				7.0	3.0							5.0		1.5	11.0				6.5	
12-13		4.5	11.0			6.0	11.5				1.0		0.5		9.5			5.0			7.0	10.0	
13-14		7.5				12.0			6.5								9.0			11.5		13.0	
14-15	8.5	11.0	4.0				6.0								4.5	7.0	3.0	12.5					
15-16			7.5				10.5	9.5							9.0			6.5			13.0		
16-17		4.0	11.0						2.5			1.0					10.0	1.0					
17-18		7.5				5.5	5.0		13.0						3.5		4.5		9.0	8.5			
18-19		10.5	4.0			11.0	9.5	6.0							8.0	6.5		8.0	12.0				
19-20	10.0		7.0								0.5	0.0		6.5	12.5		11.5	2.5					12.5
20-21		3.5	10.5				4.0		9.0				1.0		2.5		6.0				10.0	7.5	
21-22		7.0					8.5	2.0							7.0		0.0	9.5		5.5		10.5	
22-23		10.5	3.5	2.0		5.0	12.5	12.5		0.5					11.5	6.0	13.0	3.5		12.5			
23-24			7.0			10.5	3.0		5.5				0.5		2.0		7.0						8.5
24-25	11.0	3.5	10.0		4.0		7.0					1.5			6.5		1.5	10.5					
25-26		6.5					11.5	8.5							11.0			5.0	8.0		7.0		
26-27		10.0	3.0	5.5					1.5						1.0	5.5	8.5		11.0	10.0			
27-28			6.5			4.5	6.0		12.0			0.5			5.5		3.0	12.0					
28-29			10.0		7.0	10.0	10.5	5.0							10.0			6.5			13.0		
29-30	12.0	6.5								0.0				4.5	0.0		10.0	0.5				8.0	

	WZ	WZ	XX	DK	DL	DV	EG	SS	SS	SS	U	RW	RV	V	Y	SW	WW	ZZ	AE	BR	CG	DK	KV
	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CET	COM	COM	CRB	CRB	CRV	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG
MAX	11.7	11.7	8.5	12.2	12.4	11.6	9.6	9.4	10.9	10.9	7.6	10.1	9	9.5	7	9.3	9.9	10.7	11.8	9.4	11	10.3	11.5
MIN	11.3	11.1	9.6	14.2	13.2	12.4	10.6	13	11.5	11.5	8.8	10.6	10	10.2	7.6	11.8	13.2	12	12.8	10.5	11.8	10.8	12.6
DUR	3	3	4	4	5	4	3	5	4	4	5	4	4	4	6	5	5	4	4	4	3	4	5
TOT								2								2							
		(S)							(S)				(S)										
0- 1	8.0	3.0		5.0			13.0	8.5					12.5	2.5			3.5						
1- 2	4.0	9.0		5.0		0.5	2.0									1.5					1.0		
2- 3	0.0	5.5		4.5		4.5	4.0										0.5	1.0	7.0				
3- 4	6.5	1.5	1.5	4.0	3.0	8.5	6.5	8.0					12.5	2.5				7.0	6.0	1.0		6.5	
4- 5	2.5	7.5		4.0		12.5	8.5							11.0					5.5		4.5	5.5	
5- 6	8.5	3.5	9.5	3.5			10.5											4.5	4.5			4.0	
6- 7	4.5	9.5		3.0	9.5		12.5	7.5			0.0	12.0		2.5					4.0		2.0	2.5	
7- 8	0.5	5.5		3.0			2.0		10.0									1.5	3.0	1.0		1.0	
8- 9	6.5	1.5		2.5	0.5	0.0	4.0												2.5				
9-10	2.5	7.5		2.0		4.0	6.0	6.5					12.0	2.0					1.5		6.0		
10-11	8.5	3.5	1.5	2.0		8.0	8.0									5.0		5.0	1.0				
11-12	4.5	9.5		1.5	7.0	11.5	10.5							11.5					0.0	1.0	3.0	6.5	
12-13	0.5	5.5	9.5	1.0			12.5	6.0				13.0	11.5	2.0				2.5				5.5	
13-14	6.5	1.5		1.0			1.5			9.5											0.5	4.0	
14-15	3.0	8.0		0.5			3.5															2.5	
15-16	9.0	4.0		0.0			6.0	5.5						2.0				6.0	1.0		1.0	3.0	
16-17	5.0	10.0			4.0	3.0	8.0														4.5		
17-18	1.0	6.0	2.0			7.0	10.0											3.0					
18-19	7.0	2.0				11.0	12.5	5.0						12.0	2.0						2.0		
19-20	3.0	8.0	10.0		10.5		1.5											0.5	1.0		6.5		
20-21	9.0	4.0					3.5					12.5						6.5				5.5	
21-22	5.0	0.0			1.5		5.5	4.0						2.0							5.5	4.0	
22-23	1.0	6.0					8.0											3.5				2.5	
23-24	7.0	2.0				2.5	10.0													0.5	3.0	1.0	
24-25	3.0	8.0	2.0		8.0	6.5	12.0	3.5						2.0				1.0					
25-26	9.5	4.5				10.5	1.0							12.5		6.0	7.0				0.5		
26-27	5.5	0.5	10.0				3.5		9.5	12.0											6.5		
27-28	1.5	6.5					5.5	3.0						1.5				4.5	0.5		7.0		
28-29	7.5	2.5					7.5					12.5									4.0	5.5	
29-30	3.5	8.5			5.5		9.5											1.5				4.0	

	RW	AF	SZ	TU	UX	CC	CT	AV	DF	DF	DI	DK	SW	SW	VX	CM	CO	CO	Y	UU	UV	VZ	T	
	GEM	GEM	HER	HER	HER	HER	HER	HYA	HYA	HYA	HYA	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LMI	
MAX	9.6	10.2	10.2	10.6	8.9	9.5	9.9	10.2	11	11	11	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	13.4	9.8	12.8	11.2	10.6	11.5	11.5	12	11	10	10	12.3	9.5	11	11	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		13.0	0.5									10.5	5.5	2.0	2.0									
1- 2								8.0			8.0	12.0	4.5	1.0	3.5	2.0		5.0			12.0			
2- 3	6.0				2.0		0.0						4.0	7.5	5.5		0.0							
3- 4								9.0					3.0	7.0	7.0			10.5						
4- 5		6.5	2.5							9.5			2.0	6.0		7.0		7.0		8.0	12.0			
5- 6	3.0	12.0						10.5					1.0	5.0		2.0							8.5	
6- 7													0.0	4.0									10.5	
7- 8								11.5		11.5			7.0	3.0				9.0			12.0	12.5		
8- 9									8.0				6.0	2.0		4.0		12.0						
9-10		5.5	0.5					12.5	7.5	7.5			5.0	1.5		2.5				9.0				
10-11		11.5							7.5		8.5		4.0	0.5									12.0	
11-12									7.5		10.0		3.5	7.0			6.5							
12-13									7.0	9.5	11.0		2.5	6.5		7.5		0.0						
13-14			2.5						7.0		12.0		1.5	5.5									12.0	
14-15		5.0						7.5	6.5				0.5	4.5	1.0		8.5			9.5				
15-16		11.0							6.5	11.0			7.5	3.5	3.0			2.0						
16-17					0.5			8.5	6.5				6.5	2.5	4.5								12.0	
17-18													5.5	1.5	6.5	3.0	10.5						8.0	
18-19			0.5					10.0		13.0			4.5	1.0	8.0			4.5					10.0	
19-20	10.5	4.5											3.5	7.5						10.5	12.0	12.5		
20-21		10.5						11.0		9.0			3.0	6.5		8.0			7.0				6.0	
21-22													2.0	6.0				6.5						
22-23	7.5		2.5					12.5			9.0		1.0	5.0			1.5						12.0	
23-24				0.0						11.0	10.0		0.0	4.0										6.5
24-25		4.0									11.0		7.0	3.0				8.5		11.5				
25-26	4.0	9.5									12.0		6.0	2.0		3.5	3.5		8.5		12.0			
26-27										12.5			5.0	1.0										7.0
27-28			0.5			0.0	0.5	7.0					4.0	0.5				10.5						
28-29									8.0		9.0		3.5	7.0	0.0		5.5						12.0	
29-30								8.5	7.5				2.5	6.0	2.0						12.5		7.5	7.5

	Z	RR	RY	UZ	EW	FL	RU	RU	RW	AT	BB	BO	U	V508	V839	EQ	ER	ER	ET	FL	FT	FZ	FZ	
	LEP	LEP	LYN	LYR	LYR	LYR	MON	MON	MON	MON	MON	MON	OPH	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI	
MAX	11	10.2	11.9	9.8	11.2	8.7	10.6	10.6	9.1	10.6	10.6	10.8	5.8	10.1	8.8	10.3	9.5	9.5	11.2	10.5	9.1	10.7	10.7	
MIN	12.5	10.9	13.3	11	13.6	9.5	11.3	11.3	11.9	11.4	11.3	12.1	6.5	10.7	9.4	13.3	10.2	10.2	12.4	13.2	9.7	11.3	11.3	
DUR	4	4	4	5	5	4	5	5	5	5	4	5	5	3	3	4	3	3	5	3	4	3	3	
TOT									1			1												
									(S)									(S)					(S)	
0- 1	7.0	12.5	8.5														7.5			6.0		5.0		
1- 2	7.0	10.0			1.0						12.0						3.5	8.5			6.0		5.0	
2- 3	7.0	8.0									5.5		1.0	0.0			10.0	5.0				5.0		
3- 4	6.5	6.0	5.5			3.5								1.0	0.0		6.5			8.5		5.0		
4- 5	6.5	4.0		3.0			13.0				10.5			2.0		11.0		8.0			9.5	5.0		
5- 6	6.5														1.0		9.0	4.0	12.0				5.0	
6- 7	6.0			0.5												5.0	5.5		10.5	11.0		5.0		
7- 8	6.0		12.5								8.5	9.5			2.5			7.0	9.5				5.0	
8- 9	6.0								11.0								8.5		8.5				5.0	
9-10	5.5							6.5									4.5	10.0	7.0				5.0	
10-11	5.5		9.5						8.5		7.0								6.0	6.0			5.0	
11-12	5.5	12.0															10.5	7.5		5.0			5.0	
12-13	5.5	10.0							6.5		12.0		0.0	0.0			4.0	9.0	3.5				5.0	
13-14	5.0	8.0	6.5								5.5					1.0		4.5		5.0			5.0	
14-15	5.0	6.0				1.0			4.0						2.0	1.0		6.5		5.0			5.0	
15-16	5.0	4.0					7.0				10.0								8.0				5.0	
16-17	4.5					5.5		11.0				7.0					2.5		9.5	4.5			5.0	
17-18	4.5																	6.0		7.5			5.0	
18-19	4.5										8.5	12.5						10.5		7.0			5.0	
19-20	4.0																	8.5	3.5				5.0	
20-21	4.0		10.5														4.0	5.0	10.0		10.0	3.5	5.0	
21-22	4.0			3.5						6.0	7.0								6.5					5.0
22-23	3.5	11.5					11.0						0.0					7.5					5.0	
23-24		9.5	7.5	1.0						7.0	11.5			1.0	1.0		4.0	9.0		12.5	7.0		5.0	
24-25		7.5									5.0								5.5	12.5			5.0	
25-26		5.5								7.5				2.5	2.0	10.0	7.0			11.0			5.0	
26-27			4.5								10.0								8.0	10.0		11.0	5.0	
27-28						2.5			12.5	8.0		10.0					4.0	9.5	4.5	9.0			5.0	
28-29																		6.0		7.5	4.0		5.0	
29-30									10.0	9.0	8.5								7.5	6.5			5.0	

	GU	GU	U	U	TY	AQ	BB	BB	BX	DI	GP	Z	RT	RV	ST	XZ	BETA	Y	UZ	UZ	U	V505	1968
	ORI	ORI	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PER	PER	PER	PER	PER	PER	PSC	PUP	PUP	SGE	SGR	SGR
MAX	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	9.7	9.7	6.4	6.4	12.3
MIN	13.5	13.5	10.5	10.5	12.6	13	11.2	11.2	11.5	10.8	11	12.4	12	12.7	13.2	12.7	3.5	12	10.6	10.3	9.1	7.6	13.3
DUR	4	4	3	3	6	12	3	3	3	2	4	6	4	8	5	4	8	7	4	4	6	5	4
TOT						4						2			1						2		
		(S)		(S)				(S)												(S)			
0- 1	9.5	4.0	5.5	1.0			6.0	2.0	6.5							7.0				6.0			
1- 2	8.5		8.5	4.0				4.0	2.5	1.5	10.5	11.0				10.5			11.0				
2- 3	7.0		2.5	7.0			1.5	6.0	5.5				7.5		2.0								0.5
3- 4	5.5	11.0	5.5	1.0			3.5		2.0	4.5			4.0							10.5			
4- 5	4.0	9.5	8.5	4.0			5.5	1.0	5.0		12.0	0.5						3.5			0.5		
5- 6		8.5	2.5	7.0				3.5	1.0	8.0									10.5				
6- 7		7.0	5.5	1.0			1.0	5.5	4.0	1.0													
7- 8	11.0	5.5	8.5	4.0			3.0		0.0				10.0		9.0	4.5				10.0			
8- 9	10.0	4.0	2.5	7.0			5.0	0.5	3.0	4.0			6.5			8.5							
9-10	8.5		5.5	1.0			7.0	2.5	6.0				2.5			12.0				9.5			
10-11	7.0		8.5	4.0			0.5	4.5	2.0	7.5					1.0		13.0						
11-12	5.5	11.0	2.5	7.0			2.5	7.0	5.0	0.5										9.5		1.5	1.0
12-13	4.0	10.0	5.5	1.0			4.5	0.0	1.0				12.0										
13-14		8.5	8.5	4.0			6.5	2.0	4.0	4.0			8.5				9.5			9.0			
14-15		7.0	2.5	7.0				4.0	0.5				5.0			2.5					4.0		
15-16	11.0	5.5	5.5	1.0		1.0	2.0	6.0	3.0	7.0			1.5		8.0	6.0				8.5			
16-17	10.0	4.0	8.5	4.0			4.0		6.0	0.0						10.0	6.5						
17-18	8.5		2.0	6.5			6.0	1.5	2.5		8.0									8.5			
18-19	7.0		5.0	0.5				3.5	5.5	3.5	7.5		11.0										
19-20	5.5	11.0	8.0	3.5			1.5	5.5	1.5		7.0		7.5				3.5	5.0		8.0			
20-21	4.0	10.0	2.0	6.5			3.5		4.5	6.5	6.5		3.5							12.5			
21-22		8.5	5.0	0.5			5.5	1.0	0.5		5.5		0.0			0.5				8.0			
22-23		7.0	8.0	3.5				3.0	3.5		5.0			12.5							12.5		
23-24	11.0	5.5	2.0	6.5	0.5		0.5	5.0	6.5	3.0	4.5				6.5	7.5				7.5			
24-25	10.0	4.0	5.0	0.5			3.0	7.0	2.5		4.0		9.5	12.0		11.5				12.0		1.5	
25-26	8.5		8.0	3.5			5.0	0.5	5.5	6.0	3.5		6.0							7.0			
26-27	7.0		2.0	6.5	3.0	3.5	7.0	2.5	1.5		3.0		2.5	11.5							12.0		
27-28	5.5	11.5	5.0	0.5			0.0	4.5	4.5		2.0										7.0		
28-29	4.0	10.0	8.0	3.5			2.0	6.5	1.0	2.5	1.5			11.0						11.5			
29-30		8.5	2.0	6.5	5.0		4.0		3.5		1.0		12.0			2.0				6.5			

	AO	RW	RZ	TY	WY	AC	AM	EQ	EQ	V	X	RV	W	W	TX	TY	TY	UX	VV	XZ	ZZ	RU	AG	
	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR
MAX	10.6	8	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	
MIN	12.1	12.5	11.2	12	11.7	12.3	12.3	11	11	11.9	12	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11	11.7	11.2	11.4	9.4	
DUR	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	
TOT		1																						
									(S)					(S)			(S)							
0- 1				8.0					4.5	0.0		9.5	7.5	3.5			6.0				6.0	11.5		
1- 2			6.0	9.5	7.0		7.0	1.0	5.0	4.5		3.5	7.5	3.5	6.5		7.5		9.5			7.0		
2- 3			2.0	11.5				1.5	5.5	8.5			7.5	3.5							6.5	8.5	9.5	
3- 4		12.5	8.0		9.0		8.0	2.0	6.0			10.0	7.5	3.5		6.0			11.0			9.5		
4- 5			4.0					2.5	6.5	2.5		4.0	7.5	3.5	8.0	7.5			3.5	7.0		10.5		
5- 6			10.0		11.0		9.0	3.0	7.0	6.5			7.5	3.5					12.5	12.5		12.0		
6- 7		6.5	6.0		3.5			3.5	7.5	10.5		10.0	7.5	3.5			6.5	0.5	5.0			0.5		
7- 8			2.0		13.0		10.5	4.0		1.0		4.0	7.5	3.5	9.5		8.0					1.5	13.0	
8- 9			7.5		5.5			5.0	0.5	5.0			7.5	3.5				9.0	6.5			3.0		
9-10		1.0	3.5				11.5	5.5	1.5	9.0		10.5	7.5	3.5		7.0					4.5	4.5	4.0	11.0
10-11			9.5		7.5			6.0	2.0			4.5	7.5	3.5	11.0	8.5		8.0	8.0	10.0		5.5		
11-12			5.5	2.5			12.5	6.5	2.5	3.0			7.5	3.5							11.5	6.5	9.5	
12-13			1.5	4.0	9.0			7.0	3.0	7.0		11.0	7.5	3.5			7.0		9.5			7.5		
13-14			7.5	6.0				7.5	3.5		11.0	5.0	7.5	3.5	12.5		0.0					9.0		
14-15			3.5	8.0	11.0				4.0	1.5	10.0		7.5	3.5		6.0			11.0			10.0		
15-16			9.5	10.0	3.5			0.5	4.5	5.5	9.5	11.0	7.5	3.5		7.5			3.5	7.0		11.0		
16-17			5.5	11.5				1.0	5.5	9.5	9.0	5.5	7.5	3.5					12.5	12.5	2.0	12.5	13.0	
17-18		8.5			5.5			2.0	6.0		8.0		7.5	3.5			6.5	0.5	5.0			1.0		
18-19			7.0					2.5	6.5	3.5	7.5	11.5	7.5	3.5			8.0				9.0	2.0	11.0	
19-20			3.0		7.5			3.0	7.0	7.5	6.5	5.5	7.5	3.5				9.5	6.5			3.5		
20-21		3.0	9.0					3.5	7.5		6.0		8.0	3.5		6.5					4.5	4.5	9.5	
21-22			5.0		9.5			4.0		2.0	5.5	12.0	8.0	4.0		8.0			8.5	8.0	10.0	6.0		
22-23								4.5	0.5	6.0	4.5	6.0	8.0	4.0								7.0		
23-24			7.0		11.5	3.0		5.5	1.0	10.0	4.0	0.0	8.0	4.0			7.0	8.0	9.5			8.0		
24-25			3.0		4.0			6.0	1.5	0.0	3.5		8.0	4.0			8.5					9.5		
25-26			9.0	2.5		4.0		6.5	2.5	4.0	2.5	6.5	8.0	4.0		5.5			11.0		6.5	10.5	13.0	
26-27			4.5	4.5	6.0			7.0	3.0	8.5	2.0	0.5	8.0	4.0		7.0			3.5	7.5		12.0		
27-28	0.5			6.0		5.0		7.5	3.5		1.5		8.0	4.0		0.5			12.5	12.5		0.5	11.0	
28-29		10.5	6.5	8.0	7.5			8.0	4.0	2.5	0.5	6.5	8.0	4.0			6.0	1.0	5.0			1.5		
29-30			2.5	10.0		6.0		0.5	4.5	6.5		1.0	8.0	4.0			7.5					3.0	9.5	

	AH	BH	Z	AW	AY	BE	BO	BS	BT	BU	CD
	VIR	VIR	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	9.7	9.9	7.4	10.8	11	9.9	10.4	11	11.8	10.6	11.5
MIN	10.2	11.3	9.2	11.9	12.9	11.4	13.3	11.5	12.5	11.4	12.6
DUR	4	4	6	5	4	5	4	3	3	3	4
TOT											
0- 1				2.5		0.5	4.5				0.5
1- 2											
2- 3			0.0				3.5		3.0	2.5	1.5
3- 4						3.0				6.0	
4- 5				3.5			2.0	3.5			3.0
5- 6								2.5			
6- 7	9.5				5.5	5.5	1.0	1.5		2.0	4.0
7- 8								0.0		5.5	
8- 9				4.0							5.5
9-10											
10-11									3.0	1.5	
11-12					1.5					5.0	
12-13				5.0							
13-14				0.5							0.0
14-15								3.5		1.5	
15-16								2.5		4.5	1.5
16-17								1.5			
17-18	9.5			1.0		2.0		0.0			2.5
18-19									2.5	1.0	
19-20			4.5							4.0	4.0
20-21						4.5					
21-22				2.0							5.0
22-23		12.5								0.5	
23-24					3.0			4.5		4.0	
24-25			2.5					3.5			
25-26				2.5				2.5			
26-27								1.0	2.5	0.0	0.0
27-28									5.5	3.5	
28-29	9.5										1.0
29-30			0.0	3.5							

AAVSO Eclipsing Binary Ephemeris for December 2022

all times in U.T.

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

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

	DL	DV	EG	SS	RZ	RZ	SS	SS	U	RW	W	W	RV	RV	V	Y	SW	WW	ZZ	AE	BR	CG	DK
	CEP	CEP	CEP	CET	COM	COM	COM	COM	CRB	CRB	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG
MAX	12.4	11.6	9.6	9.4	10	10	10.9	10.9	7.6	10.1	10.6	10.6	9	9	9.5	7	9.3	9.9	10.7	11.8	9.4	11	10.3
MIN	13.2	12.4	10.6	13	10.7	10.7	11.5	11.5	8.8	10.6	11.2	11.2	10	10	10.2	7.6	11.8	13.2	12	12.8	10.5	11.8	10.8
DUR	5	4	3	5	3	3	4	4	5	4	4	4	4	4	4	6	5	5	4	4	4	3	4
TOT				2													2						
					(S)		(S)				(S)		(S)										
0- 1		2.0	12.0	2.5				7.5					10.0	10.5	1.5							1.5	2.5
1- 2		6.0	1.0				8.5			10.0		9.5									0.5		1.0
2- 3		9.5	3.0					9.5			8.5				13.0				5.0				
3- 4			5.0	1.5					9.5						9.5	1.5	2.0						
4- 5	2.5		7.5																2.5				
5- 6			9.5											8.5							0.5	3.0	
6- 7			11.5	1.0						12.0					1.5								5.5
7- 8	9.0	1.0	0.5		7.0			8.0					13.0	11.0						4.0		0.5	4.0
8- 9		5.0	3.0		7.5		9.0					9.0								3.5			2.5
9-10	0.0	9.0	5.0	0.5	8.0			9.5		10.0						1.5				3.0	2.5	0.5	1.0
10-11		13.0	7.0										12.5									4.0	
11-12			9.5																	0.5	1.0		
12-13	6.5		11.5											9.0	1.5					0.5		1.5	
13-14			0.5				8.0						12.5								0.5		
14-15		0.5	2.5					8.5		12.0	9.5				11.5				3.5				5.5
15-16	12.5	4.5	5.0				9.5					8.5				1.0	4.0						4.0
16-17		8.5	7.0										12.0										2.5
17-18	3.5	12.0	9.0							9.5											0.5	2.5	1.5
18-19			11.0			7.0										1.0							
19-20			0.5			7.5							12.0	9.5					4.5			0.0	
20-21			2.5			8.0	8.5																
21-22			4.5				9.0				9.0				12.0	1.0				1.5		0.5	
22-23	1.0	4.0	6.5				10.0			12.0				11.5								4.0	
23-24		7.5	9.0																				4.0
24-25		11.5	11.0													1.0				5.0		1.0	2.5
25-26	7.5		0.0										11.5				3.0				0.5		1.5
26-27			2.0				8.0							10.0					2.5				
27-28			4.5			8.5					9.5					1.0							
28-29			6.5				9.5			8.5			11.0	12.5									
29-30		3.0	8.5		7.0																0.0	2.5	
30-31	5.0	7.0	11.0		7.5					11.5						0.5							

	YY	RW	AF	SZ	TU	CC	CT	AV	DF	DF	DI	DK	SW	SW	VX	CM	CO	CO	Y	UU	UV	VZ	T
	ERI	GEM	GEM	HER	HER	HER	HER	HYA	HYA	HYA	HYA	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LMI
MAX	8.4	9.6	10.2	10.2	10.6	9.5	9.9	10.2	11	11	11	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	9.1	11.6	11.3	12	13.4	12.8	11.2	10.6	11.5	11.5	12	11	10	10	12.3	9.5	11	11	12.7	12.7	10.2	11.7	12.6
DUR	3	5	4	4	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)				(S)					
0- 1	0.5		9.0						7.5				1.5	5.5	4.0				10.0		7.5	10.0	
1- 2	7.5							9.5	7.5		10.5		0.5	4.5	5.5		7.5			5.0	12.0	12.0	
2- 3	6.5								7.0		7.0			3.5				1.5					8.0
3- 4	5.5							10.5	7.0		7.0	8.0	6.5	2.5		4.0					7.5		
4- 5	5.0		2.5						6.5		12.5	9.0	5.5	1.5							12.0		
5- 6	4.0		8.5					12.0	6.5			10.0	4.5	1.0				3.5	11.5				8.5
6- 7	3.0			0.5					6.5		8.5	11.0	3.5							6.0	7.5		
7- 8	2.5								6.0			12.0	3.0	6.5							12.0		
8- 9	1.5							5.5	6.0				2.0	5.5				5.5					9.0
9-10	0.5	12.0	2.0				12.5		5.5		10.5		1.0	5.0			0.5				7.5		
10-11	7.5		8.0					6.5	5.5				0.0	4.0					12.5		12.0	5.5	
11-12	6.5								5.5		7.0		7.0	3.0		5.0		7.5		7.0		7.5	9.5
12-13	5.5	9.0						8.0	5.0		12.5		6.0	2.0			2.5		5.0		7.5	9.5	
13-14	5.0								5.0				5.0	1.0	1.5						12.0	12.0	
14-15	4.0							9.0	5.0		8.5	7.0	4.0	0.5	3.0								10.0
15-16	3.0	5.5	7.0	0.5					4.5			8.0	3.0		5.0		4.5				7.5		
16-17	2.5							10.5	4.5			9.0	2.5	6.0	6.5	0.5				7.5	12.0		
17-18	1.5										10.5	10.0	1.5	5.5					6.5				10.5
18-19	0.5	2.5						11.5				11.0	0.5	4.5			6.5				7.5		
19-20	7.5									7.5	6.5	12.0		3.5		5.5		0.5			12.5		
20-21	6.5		6.5					13.0		7.5	12.0		6.5	2.5									11.0
21-22	6.0		12.5					5.0		7.5			5.5	1.5			8.5			8.5	7.5		
22-23	5.0				11.5					7.0	8.5		4.5	0.5				2.5	8.0		12.5	5.0	
23-24	4.0							6.5		7.0			3.5									7.0	11.5
24-25	3.0			0.5						7.0			2.5	6.5		1.0					7.5	9.5	
25-26	2.5		6.0					7.5		6.5	10.0		2.0	5.5			4.5				12.5	11.5	
26-27	1.5		12.0			11.5				6.5		7.0	1.0	5.0						9.5			11.5
27-28	0.5				0.0			9.0		6.0	6.5	8.0	0.0	4.0	0.5	6.0			9.5		7.5		
28-29	7.5									6.0	12.0	9.0	7.0	3.0	2.5		6.5				12.5		
29-30	6.5							10.0		6.0		10.0	6.0	2.0	4.0		1.5						12.0
30-31	6.0		5.5							5.5	8.0	11.0	5.0	1.0	6.0						7.5		

	Z	RR	DELT	RY	UZ	EW	FL	RU	RU	RW	AT	BB	BO	V508	V839	EQ	ER	ER	ET	FL	FT	FZ	FZ
	LEP	LEP	LIB	LYN	LYR	LYR	LYR	MON	MON	MON	MON	MON	MON	OPH	OPH	ORI	ORI	ORI	ORI	ORI	ORI	ORI	ORI
MAX	11	10.2	4.8	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
MIN	12.5	10.9	5.9	13.3	11	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
DUR	4	4	7	4	5	5	4	5	5	5	5	4	5	3	3	4	3	3	5	3	4	3	3
TOT										1			1										
									(S)									(S)				(S)	
0- 1	2.5			12.0											0.0		9.0	3.5	5.5			5.0	
1- 2	2.5									8.0	9.5						5.0		4.0	6.5			5.0
2- 3	2.0											6.5		0.0		9.5	1.5	6.5	3.0			5.0	
3- 4	2.0			8.5				5.0		5.5	10.5						8.0	3.0	1.5			5.0	
4- 5	2.0	9.0							9.0			11.5				3.5	4.0	9.5	0.5	9.0		5.0	
5- 6	2.0	7.0								3.5	11.0	5.0						5.5				5.0	
6- 7		5.0		5.5									7.5				7.0	2.0				5.0	
7- 8		3.0									11.5	9.5					3.5	8.5				5.0	
8- 9						1.5	0.0					3.5					10.0	5.0				5.0	
9-10				2.5												9.0	6.0				1.0	5.0	
10-11				13.0	1.5	0.5		9.0				8.0					2.5	7.5				5.0	
11-12																3.0	9.0	4.0				5.0	
12-13														0.0			5.5			3.0	5.0	5.0	
13-14				9.5								6.5					1.5	6.5				5.0	
14-15						13.0											8.0	3.0				5.0	
15-16		9.0							3.0			11.0	5.5				4.5	9.5	10.5	5.5	8.5		5.0
16-17		7.0		6.5								4.5				9.0		6.0	9.0			5.0	
17-18		5.0											11.0				7.0	2.0	8.0				5.0
18-19		2.5								11.5		9.5				2.5	3.5	8.5	7.0	8.0	12.0	5.0	
19-20			13.0	3.5													10.0	5.0	5.5				5.0
20-21										9.5							6.5		4.5			5.0	
21-22						1.5	3.5					8.0					2.5	8.0	3.5	10.5			5.0
22-23								7.0	7.0					0.0			9.0	4.0	2.0			5.0	
23-24				11.0												8.5	5.5		1.0				5.0
24-25										5.0		6.0					2.0	7.0				5.0	
25-26																2.5	8.5	3.0					5.0
26-27		8.5	12.5	7.5						2.5		11.0	8.5				4.5	9.5		2.0		5.0	
27-28		6.5			2.0							4.5						6.0					5.0
28-29		4.5						7.5									7.5	2.5				5.0	
29-30		2.5		4.5		12.0			11.0			9.5					4.0	9.0		4.5			5.0
30-31																8.0		5.0				5.0	

	GU	GU	U	U	TY	BB	BB	BX	DI	GP	Z	RT	RV	ST	XZ	BETA	Y	UZ	UZ	U	V505	AO	CC
	ORI	ORI	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PER	PER	PER	PER	PER	PER	PSC	PUP	PUP	SGE	SGR	SER	SER
MAX	12.6	12.6	9.7	9.7	10.5	10.6	10.6	10.9	9.6	10.2	9.9	10.6	10.3	9.7	10.6	2.2	9	9.7	9.7	6.4	6.4	10.6	11.1
MIN	13.5	13.5	10.5	10.5	12.6	11.2	11.2	11.5	10.8	11	12.4	12	12.7	13.2	12.7	3.5	12	10.6	10.3	9.1	7.6	12.1	11.7
DUR	4	4	3	3	6	3	3	3	2	4	6	4	8	5	4	8	7	4	4	6	5	4	4
TOT											2			1						2			
		(S)		(S)			(S)												(S)				
0- 1	1.5	7.0	5.0	0.5			2.0		6.0	0.5		8.5	10.0		5.5				11.0			13.0	
1- 2	11.5	5.5		3.5			4.0	3.0				4.5		5.5	9.0				6.0	1.5			
2- 3	10.0	4.0	2.0	6.5		1.5					0.0	1.0	9.5		13.0			11.0					
3- 4	8.5	3.0	5.0	0.5		3.5		2.0	2.0							11.5		6.0					
4- 5	7.0	1.5		3.5			1.5	5.0					9.0							10.5			
5- 6	5.5	11.5	2.0	6.5			3.5	1.0	5.5		1.5	10.5								5.5			
6- 7	4.0	10.0	5.0	0.5		1.0		4.0				7.0	8.5			8.0		10.0					
7- 8	3.0	8.5		3.5		3.0		0.0				3.5						5.5					
8- 9	1.5	7.0	2.0	6.5		5.0	1.0	3.0	1.5		3.0		7.5		7.0		0.5		10.0			11.0	
9-10		5.5	5.0	0.5			3.0							4.0	10.5	5.0			5.0				
10-11	10.0	4.0		3.5		0.5	5.0	2.0	5.0				7.0						9.5				10.5
11-12	8.5	3.0	2.0	6.5		2.5					4.0	9.5							4.5				11.5
12-13	7.0	1.5	5.0	0.5		4.5	0.0	1.5				5.5	6.5			2.0			9.5				12.0
13-14	5.5			3.5			2.5	4.0	1.5			2.0							4.5				
14-15	4.5	10.0	2.0	6.5			4.5	0.5			5.5		5.5	11.0	1.0			9.0					
15-16	3.0	8.5	5.0	0.5		2.0		3.5	4.5						5.0							12.0	
16-17	1.5	7.0		3.5		4.0																	
17-18		5.5	2.0	6.5			1.5	2.5			7.0	8.0		2.5	12.0								
18-19	10.0	4.5	5.0	0.5			3.5		1.0			4.5	4.5						8.5				
19-20	8.5	3.0		3.5		1.5		1.5				1.0											
20-21	7.0	1.5	2.0	6.5		3.5		4.5	4.0		8.0		4.0										8.0
21-22	5.5		5.0	0.5			1.0	0.5															12.5
22-23	4.5	10.0		3.0			3.0	3.5				10.5	3.0	9.5	2.5				8.0				12.5
23-24	3.0	8.5	1.5	6.0		1.0			0.5		9.5	6.5			6.5		2.0						12.5
24-25	1.5	7.0	4.5	0.0		3.0		2.5				3.0	2.5		10.0								7.5
25-26		5.5		3.0		5.0	0.5		3.5					1.5									12.0
26-27	10.0	4.5	1.5	6.0			2.5	2.0			11.0		2.0			10.0			7.0		0.0		10.5
27-28	8.5	3.0	4.5	0.0	1.0	0.5	4.5	4.5															12.0
28-29	7.0	1.5		3.0		2.5		1.0	0.0			9.0	1.5										7.0
29-30	5.5		1.5	6.0		4.5	0.0	4.0				5.5			0.5	6.5			11.5				
30-31	4.5	10.0	4.5	0.0	3.0		2.0	0.0	3.5	6.5		2.0	0.5	8.5	4.0				6.5				

	CC	RW	RZ	TY	WY	AC	AM	EQ	EQ	V	X	RV	W	W	TX	TY	TY	UX	VV	XZ	ZZ	RU	VV	
	SER	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	VIR
MAX	11.1	8	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	
MIN	11.7	12.5	11.2	12	11.7	12.3	12.3	11	11	11.9	12	12.5	9.9	9.9	8.9	12.4	12.4	13.8	11	11.7	11.2	11.4	13.5	
DUR	4	4	3	2	4	6	5	3	3	4	4	4	3	3	6	3	3	1	3	3	4	4	4	
TOT		1																						
	(S)								(S)					(S)			(S)							
0- 1			8.5		9.5			1.0	5.0				8.0	4.0		5.0			6.5				4.0	
1- 2		5.0	4.5		2.0	7.0		1.5	6.0	0.5		7.0	8.0	4.0		6.5				4.5			5.0	
2- 3	10.5		0.5		11.5			2.5	6.5	4.5		1.0		4.0		8.0	3.5	9.0	8.0	10.0	4.0		6.5	
3- 4	11.5		6.5		4.0	8.0		3.0	7.0	9.0				4.0			5.0						7.5	
4- 5	12.0		2.5					3.5	7.5			7.5		4.0			6.5	8.0	9.5		11.5		9.0	
5- 6			8.0		6.0	9.0		4.0	8.0	3.0		1.5		4.0		4.0	8.0		2.0				10.0	
6- 7			4.0				1.0	4.5	0.5	7.0				4.0		5.5		7.5	11.0				11.0	
7- 8			0.0		8.0	10.0		5.0	1.0			7.5		4.0		7.0			3.5	7.5			12.5	
8- 9			6.0	1.0	0.5		2.0	5.5	1.5	1.0		2.0		4.0			4.5	6.5	12.5	12.5			1.0	
9-10			2.0	2.5	9.5			6.5	2.0	5.0				4.0			6.0		5.0			1.5	2.0	
10-11			8.0	4.5	2.5		3.0	7.0	3.0			8.0		4.0			7.5						3.5	
11-12			4.0	6.5	11.5			7.5	3.5			2.0		4.0		4.5			6.5		9.0		4.5	
12-13		6.5	10.0	8.0	4.0		4.0	8.0	4.0	3.5				4.0		6.0					4.5		6.0	
13-14			5.5	10.0				0.5	4.5	7.5		8.5		4.0		7.5		9.0	8.0	10.0			7.0	
14-15			1.5		6.0		5.0	1.0	5.0			2.5		4.5	3.5		5.0						8.0	
15-16		1.0	7.5					1.5	5.5	1.5				4.5			6.5	8.5	9.5				9.5	
16-17			3.5		8.0		6.5	2.0	6.0	6.0		9.0		4.5		4.0	8.0		2.0				10.5	
17-18			9.5		0.5			2.5	7.0			3.0		4.5	5.0	5.5		7.5	11.0				11.5	
18-19	10.5		5.5		10.0		7.5	3.5	7.5					4.5		7.0			3.5	7.5	6.5		0.5	
19-20	11.0		1.5		2.5			4.0	8.0	4.0		9.0		4.5		8.5	4.0	7.0	12.5	12.5			1.5	
20-21	12.0		7.5		11.5		8.5	4.5	0.5	8.0	9.0	3.0		4.5	6.5		5.5		5.0				2.5	
21-22			3.5		4.5			5.0	1.0		8.0			4.5			7.0	6.0					4.0	
22-23			9.0	1.0			9.5	5.5	1.5	2.0	7.5	9.5		4.5		4.5			6.5				5.0	
23-24		8.5	5.0	3.0	6.0			6.0	2.0	6.5	7.0	3.5		4.5	8.0	6.0					4.5		6.5	
24-25			1.0	4.5			10.5	7.0	2.5		6.0			4.5		7.5			8.0	10.0			7.5	
25-26			7.0	6.5	8.0			7.5	3.0	0.5	5.5	10.0		4.5			5.0					4.0	8.5	
26-27		3.0	3.0	8.5	0.5		11.5	8.0	4.0	4.5	5.0	4.0		4.5	9.5		6.5	8.5	9.5				10.0	
27-28			9.0	10.0	10.0			0.5	4.5	8.5	4.0			4.5			8.0		2.0		11.0		11.0	
28-29			5.0		2.5			1.0	5.0		3.5	10.0		4.5		5.0		8.0	11.0				12.5	10.5
29-30			1.0		12.0			1.5	5.5	3.0	2.5	4.5		4.5	11.5	6.5			3.5	7.5			1.0	
30-31			7.0		4.5			2.0	6.0	7.0	2.0			4.5		8.0	4.0	7.0	12.5	12.5			2.0	

