

	RT	TW	UU	WZ	XZ	AB	AD	AD	BD	BX	DS	QX	QX	RY	CX	CZ	XZ	KO	KP	OO	OO	V342	V343
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	AQR	AQL	AQL	AQL	AQL	AQL	AQL	AQL
MAX	9.3	8.8	11.2	11.6	10.0	9.3	11.1	11.1	11.3	8.6	10.8	11.3	11.3	8.8	10.7	10.3	9.3	8.3	9.7	9.2	9.2	9.0	10.6
MIN	10.2	11.0	14.1	12.6	13.0	10.2	11.6	11.6	11.7	9.5	11.4	11.6	11.6	10.1	12.0	11.2	11.2	9.3	10.5	10.1	10.1	12.5	12.3
DUR	3	11	8	4	3	3	4	4	3	4	4	3	3	5	3	3	7	5	4	3	3	7	4
TOT		2																					3

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

	V346	RX	SS	SS	SX	WW	AP	AP	IM	V459	SS	SS	SS	TU	TU	TY	TY	TZ	TZ	VW	VW	ZZ	AD
	AQL	ARI	ARI	ARI	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO
MAX	9.0	9.4	10.1	10.1	8.2	5.7	10.9	10.9	7.9	7.7	10.3	10.3	10.3	11.7	11.7	11.8	11.8	10.6	10.6	10.5	10.5	6.8	9.8
MIN	10.4	9.9	11.1	11.1	9.0	6.4	11.4	11.4	8.5	8.1	11.0	11.0	11.0	12.7	12.7	12.3	12.3	11.1	11.1	11.0	11.0	7.6	10.4
DUR	4	4	3	3	4	5	4	4	4	4	18	18	18	3	3	3	3	3	3	3	3	5	4
TOT											6	6	6										
				(S)			(S)				(2)		(3)			(S)		(S)		(S)		(S)	(S)
0- 1			9.0											7.0	3.0	4.5		2.5	6.0		6.0		
1- 2				9.5			3.0		10.0					6.5	2.5	3.5	7.5		3.5	2.5	6.5		
2- 3														5.5		2.5	6.0	4.5		3.0	7.0		
3- 4	5.5							2.5						5.0			5.0	2.0	5.5	3.5	7.5		
4- 5	8.0													4.5		7.5	4.0	6.5	3.0	4.5			
5- 6	10.5						2.5							3.5	7.5	6.5	2.5	4.0		5.0			
6- 7														3.0	7.0	5.0			5.0	5.5			
7- 8								2.5						2.5	6.0	4.0		6.0	2.5	6.0	2.0		3.5
8- 9															5.5	3.0	6.5	3.0	7.0	7.0	2.5		
9-10							2.0								5.0	1.5	5.5		4.0	7.5	3.5		5.0
10-11															4.5		4.5	5.0		8.0	4.0	9.0	
11-12						2.0		2.0			2.0	5.0	8.0	7.5	3.5	7.0	3.0	2.5	6.0		4.5		6.5
12-13				8.5										7.0	3.0	6.0	2.0	7.0	3.5		5.5		
13-14	4.5		9.0				1.5							6.0	2.5	4.5		4.5		2.0	6.0		8.5
14-15	7.0			9.5										5.5		3.5	7.5	2.0	5.5	2.5	6.5		
15-16	9.5	9.0	9.5							2.0				5.0		2.5	6.0	6.5	3.0	3.0	7.5	9.0	
16-17		9.5			10.5									4.5			5.0	4.0		4.0	8.0		
17-18		10.0												3.5	7.5		4.0		4.5	4.5			
18-19		11.0												3.0	7.0	6.5	2.5	5.5	2.0	5.0			
19-20														2.5	6.0	5.5		3.0	6.5	5.5			
20-21															5.5	4.0			4.0	6.5	2.5	9.0	
21-22															5.0	3.0	7.0	5.0		7.0	3.0		
22-23															4.5	2.0	5.5	2.5	6.0	7.5	3.5		
23-24	3.5													7.5	3.5		4.5	7.0	3.5		4.0		
24-25	6.0													7.0	3.0	7.0	3.5	4.5			5.0		
25-26	8.5													6.0	2.5	6.0	2.0		5.5		5.5	8.5	
26-27			8.5							7.0	10.0			5.5		5.0		6.0	2.5	2.0	6.0		
27-28				9.0										5.0		3.5	7.5	3.5		2.5	7.0		
28-29			9.5											4.0		2.5	6.0		4.5	3.5	7.5		
29-30														3.5	7.5		5.0	5.5	2.0	4.0	8.0		

MAS Eclipsing Binary Ephemeris for June 2018

all times in U.T.

Page 3

	AD	BW	BW	Y	SV	AL	CD	CD	XZ	RW	TY	RZ	TV	TW	ZZ	AB	CW	CW	DZ	IR	IS	IT	IV	
	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CMI	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	
MAX	9.8	7.1	7.1	10.6	8.6	10.5	11.6	11.6	9.7	9.8	10.5	6.4	7.3	8.3	10.7	10.2	11.8	11.8	11.6	10.8	11.6	11.0	11.2	
MIN	10.2	7.5	7.5	12.4	9.4	11.3	11.8	11.8	10.2	10.8	11.6	7.8	8.4	8.9	11.1	12.2	12.5	12.5	12.3	12.1	12.6	11.8	12.5	
DUR	4	5	5	6	3	5	5	5	3	5	4	4	4	5	4	4	3	3	4	4	5	5	5	
TOT	(S)		(S)					(S)										(S)						
0- 1				6.5	5.0		10.0				6.5				6.0		5.5						5.5	
1- 2					9.5		4.5										4.0			4.5	8.0	6.0	5.5	
2- 3						9.5		8.0						5.5			3.0	7.0	7.0				5.5	
3- 4					4.0		2.5					3.5				5.5	2.0	6.0		5.5	4.5		5.5	
4- 5			8.5		8.5		6.0					8.0	8.0					5.0					5.5	
5- 6							9.5			7.5				2.0	5.5			4.0	10.5	6.5			5.5	
6- 7	2.5	7.5			3.0	9.0		4.0	2.0				3.5				6.5	3.0	5.0				5.5	
7- 8					7.5		7.5				9.5					8.0	5.5	2.0		7.5			5.5	
8- 9	4.0						11.0										4.5						5.0	
9-10					2.5		5.0					3.0		9.0			3.5	7.5	8.5	8.5			5.0	
10-11	6.0			4.5	7.0	8.5	8.5				5.5	7.5					2.5	6.5	3.5				5.0	
11-12							3.0								10.5	10.5		5.5		9.5			5.0	
12-13	7.5							6.5						5.5				4.0			9.5		5.0	
13-14					6.0		10.0						9.5				7.0	3.0	6.5	10.5			5.0	
14-15	9.0		8.5		10.5	8.5	4.5									4.0	6.0	2.0			5.5		5.0	
15-16								8.0				2.5	5.0	2.0	4.0		5.0							5.0
16-17		7.5			5.0		2.0					7.0			10.0		4.0		10.0	4.0				5.0
17-18					9.5		5.5		2.0		8.5						3.0	6.5	5.0					5.0
18-19						8.0		9.0								6.5	2.0	5.5		5.0				5.0
19-20					4.5		3.5							9.0				4.5						5.0
20-21				2.5	8.5		7.0								3.5		7.5	3.5	8.0	6.0				5.0
21-22							10.5					1.5			9.5		6.5	2.5						5.0
22-23					3.5	7.5	5.0			6.5		6.5	11.0	5.5		9.0	5.5			7.0				4.5
23-24				9.5	8.0		8.5										4.5				10.5			4.5
24-25			8.0				3.0						6.5				3.0	7.0	6.5	8.0				4.5
25-26					2.5		6.5							2.0	3.0	2.5	2.0	6.0			6.5			4.5
26-27		7.5			7.0	7.0	10.0								9.0			5.0		9.0				4.5
27-28							4.0				7.5							4.0	9.5		3.0			4.5
28-29					2.0		7.5	2.0				6.0					6.5	3.0	4.5	10.0				4.5
29-30					6.0		2.0					10.5		8.5		5.0	5.5	2.0						4.5

	MM	OR	OX	PV	V364	V364	V375	V380	SU	WW	WZ	WZ	XX	ZZ	DK	DL	DV	EG	EK	GK	SS	TT	TX
	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CET	CET	CET
MAX	11.3	11.4	10.1	10.0	11.2	11.2	10.1	10.4	8.8	11.1	11.7	11.7	8.5	9.3	12.2	12.4	11.6	9.6	8.2	6.9	9.4	10.8	10.9
MIN	11.9	12.4	10.9	10.6	11.7	11.7	10.9	11.1	9.8	11.9	11.3	11.1	9.6	10.0	14.2	13.2	12.4	10.6	9.5	7.4	13.0	11.3	11.5
DUR	5	4	5	3	4	4	5	5	4	4	3	3	4	5	4	5	4	3	6	4	5	3	4
TOT																					2		1
						(S)						(S)											
0- 1		5.0			9.5					3.0	3.0	8.0			7.0		7.0		8.0				
1- 2		11.0	9.0								9.5	4.5			6.5	7.5		9.0		6.5			
2- 3							3.5	10.0	10.5		5.5				6.5		5.0			5.0	11.0		
3- 4									8.0			6.5			6.0		9.0			3.5			
4- 5				5.0		6.0			5.5		7.5	2.5	6.5		5.5			2.5		2.0			
5- 6		4.5					2.5	3.0	3.0		3.5	8.5		2.5	5.5			4.5					
6- 7	6.0	10.5	8.5								9.5	4.5			5.0	5.0		6.5	9.5				
7- 8	10.0					8.0					5.5			6.0	4.5			9.0					
8- 9												6.5			4.5								
9-10								5.0		8.0	7.5	2.5		9.0	4.0		4.5						
10-11		4.0				10.0					3.5	8.5			3.5		8.0	2.0					
11-12		10.0	8.0	5.0					10.5		9.5	4.5	7.0		3.5	2.5		4.5					
12-13									8.0		5.5				3.0			6.5					
13-14	5.0							6.5	6.0		2.0	7.0			2.5			8.5		10.5		11.0	10.5
14-15	8.5				6.5				3.5		8.0	3.0			2.5	8.5		10.5		9.0		10.0	
15-16		3.5					10.0				4.0	9.0			2.0				6.5	7.5			
16-17		9.5	7.5								10.0	5.0					3.5	2.0		6.0			10.0
17-18					8.5			8.5			6.0						7.5	4.0		4.5			
18-19				5.5			8.5				2.0	7.0	7.0					6.0		3.0			
19-20											8.0	3.0				6.0		8.5					
20-21		3.5			11.0				11.0		4.0	9.0		2.0				10.5					
21-22	7.5	9.0	6.5				7.5	10.0	8.5			5.0											
22-23									6.0		6.0			5.5				1.5					
23-24									4.0	3.0	2.0	7.0					3.0	4.0					
24-25					7.5	6.0	3.0				8.5	3.5		9.0		3.5	7.0	6.0	3.0				
25-26		3.0		5.5							4.5	9.5	7.5				10.5	8.0					
26-27		8.5	6.0									5.5						10.5					
27-28					9.5	5.0					6.5					10.0							
28-29	6.5							5.0			2.5	7.5								10.0			
29-30	10.0										8.5	3.5						3.5		8.5			

	RW	RW	RZ	RZ	SS	SS	CC	CC	U	RW	TW	W	W	RV	RV	SX	SX	V	SW	WW	ZZ	AE	BR
	COM	COM	COM	COM	COM	COM	COM	COM	CRB	CRB	CRB	CRV	CRV	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG	CYG
MAX	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0	7.6	10.1	10.5	10.6	10.6	9.0	9.0	8.9	8.9	9.5	9.3	9.9	10.7	11.8	9.4
MIN	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9	8.8	10.6	11.3	11.2	11.2	10.0	10.0	9.2	9.2	10.2	11.8	13.2	12.0	12.8	10.5
DUR	3	3	3	3	4	4	2	2	5	4	4	4	4	4	4	3	3	4	5	5	4	4	4
TOT																			2				
		(S)		(S)		(S)		(S)					(S)		(S)		(S)						
0- 1		3.5		5.5	6.5		5.0	2.0		2.5		3.0		3.0			4.0		6.5				
1- 2	5.0	2.5	1.5	6.0	2.0	7.0	2.0	4.5			4.0		2.0				3.0				3.0		
2- 3	4.0		2.0	6.0		3.0	4.5	2.0		6.5	8.5					5.5					9.5		
3- 4	3.0	5.5	2.5	6.5	4.0		1.5	4.5				5.5		3.0		4.5		1.5				7.5	
4- 5		4.5	3.0	7.0		4.5	4.0		3.5		3.0		4.5		5.5	3.0					6.5		
5- 6		3.0	3.0	7.5	5.5			4.0		4.5	7.0	4.0				2.0		4.5	8.5				
6- 7	5.0	2.0	3.5	7.5		6.0	4.0						3.0	2.5			4.5				4.0		
7- 8	3.5		4.0		7.0	2.0		3.5		8.5		2.5			5.0		3.0			10.0	10.5	7.5	
8- 9	2.5	5.5	4.5		2.5	7.5	3.5			2.0	5.5		2.0				2.0					9.5	
9-10		4.0	4.5			3.5		3.5			10.0			2.5		4.5					7.0	9.0	
10-11	5.5	3.0	5.0		4.0		3.0			6.5		5.0			4.5	3.5		2.0		5.5		8.0	
11-12	4.5		5.5			5.0		3.0			4.5		4.5			2.0					4.5	7.5	7.0
12-13	3.5		6.0	2.0	5.5		3.0			11.0	8.5	3.5		2.0			5.0				10.5	6.5	
13-14	2.0	5.0	6.0	2.0		6.5		2.5		4.0			3.0		4.5		3.5				1.5	6.0	
14-15		3.5	6.5	2.5	7.5	2.5	2.5	5.0			3.0	2.0					2.5				8.0	5.0	
15-16	5.5	2.5	7.0	3.0	3.0		5.0	2.5		8.5	7.5			2.0		5.0						4.5	7.0
16-17	4.0		7.5	3.5		4.0	2.0	5.0		2.0			5.5		4.0	4.0					5.0	3.5	
17-18	3.0		7.5	3.5	4.5		4.5	2.0				4.5				2.5		2.5					
18-19		4.5		4.0		5.5	2.0	4.5		6.0	6.0		4.0				5.0				2.5		
19-20		3.5		4.5	6.0		4.5				10.0	3.0			4.0		4.0		1.5		8.5		7.0
20-21	5.0	2.0		5.0	2.0	7.0		4.0		10.5			2.5				3.0			4.0			
21-22	3.5			5.0	7.5	2.5	4.0		9.5	4.0	4.5	2.0				5.5					6.0		
22-23	2.5	5.5		5.5	3.5			4.0			9.0				3.5	4.0							
23-24		4.0	2.0	6.0		4.5	3.5			8.5			5.0			3.0					3.0		7.0
24-25		3.0	2.0	6.0	5.0			3.5			3.5	4.5				2.0		3.0			9.5		
25-26	4.5		2.5	6.5		6.0	3.5				7.5		3.5		3.5		4.5						
26-27	3.5		3.0	7.0	6.5			3.0		6.0		3.0					3.0				6.5		
27-28	2.0	5.0	3.5	7.5	2.5	7.5	3.0				2.0		2.0				2.0						7.0
28-29		4.0	3.5	7.5		3.0		3.0	7.5	10.5	6.0				3.0	4.5		5.0			4.0		
29-30	5.5	2.5	4.0		4.0		2.5			3.5	10.5					3.5					10.0		

	CG	DK	KR	KV	V346	V387	V388	V401	V456	V466	V466	V477	V548	V704	1034	W	TT	TY	YY	FZ	Z	RZ	TW
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DEL	DRA	DRA	DRA
MAX	11.0	10.3	9.2	11.5	11.8	11.5	9.7	10.8	10.8	10.8	10.8	8.3	8.9	13.8	9.6	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8
MIN	11.8	10.8	10.0	12.6	13.6	12.3	10.3	11.6	11.9	11.6	11.6	9.2	9.7	14.6	10.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5
DUR	3	4	4	5	5	3	3	4	3	4	4	4	5	4	4	7	5	4	4	3	4	3	5
TOT																2							1

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

	UZ	UZ	AI	BH	S	Z	RX	SZ	TT	TU	UX	CC	CT	DI	DI	HS	HS	LT	V728	WY	AV	DF	DF
	DRA	DRA	DRA	DRA	EQU	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HYA	HYA	HYA	HYA
MAX	9.9	9.9	7.2	8.0	8.0	7.3	7.1	10.2	9.7	10.6	8.9	9.5	9.9	8.4	8.4	8.5	8.5	10.7	10.9	10.3	10.2	11.0	11.0
MIN	10.7	10.7	8.2	8.6	10.0	8.2	7.7	12.0	10.4	13.4	9.8	12.8	11.2	9.1	9.1	9.0	9.0	11.1	11.5	11.1	10.6	11.5	11.5
DUR	5	5	4	5	5	8	5	4	4	5	5	4	4	6	6	4	4	4	3	3	4	4	4
TOT										1													
		(S)												(S)		(S)							(S)
0- 1			8.5							6.5													6.0
1- 2													3.0					3.0	4.5		3.0		
2- 3						10.0		9.0			3.0	7.5						5.0	3.0				
3- 4								4.5	10.5								8.0	7.0					
4- 5	4.0						10.5		8.5							3.0		9.0					
5- 6			3.5	6.5	5.5				6.5		5.5								10.0				
6- 7			8.5			10.0	5.5		4.5										9.0				
7- 8	10.5			2.5				7.0	2.5					5.5	9.5				7.5			3.0	
8- 9								2.5			8.0		6.5				6.0		6.0			3.0	
9-10										8.0		6.0							4.5			2.5	
10-11						9.5													3.5			2.5	
11-12			3.5					9.0			10.0								2.0			2.5	
12-13		8.0	8.0					4.5									7.5					2.0	
13-14							8.0										4.0		10.5	2.0		2.0	
14-15				8.5		9.5			9.5									3.0	9.0		2.5		
15-16							3.0		7.5				10.0					5.0	7.5				
16-17				4.5				6.5	5.0	3.5		4.5					10.5	7.0	6.5		4.0		
17-18	5.5		3.5					2.5	3.0				5.0				5.5	9.0	5.0				
18-19			8.0			9.5				9.5									3.5	2.5			
19-20											4.0								2.0				
20-21							11.0	9.0						5.0									
21-22								4.5					9.5				8.5		11.0				
22-23		2.5			9.5	9.0	5.5				6.5						3.5		9.5				
23-24			3.0	11.0									3.0						8.0				
24-25			8.0						10.0				8.5						6.5				
25-26		9.0		6.5				6.5	8.0	5.0	8.5					10.0			5.5				
26-27						9.0		2.5	6.0				3.0				6.0		4.0				
27-28				2.0					4.0									3.5	2.5		2.0		3.0
28-29											8.0			8.0				5.5					3.0
29-30			3.0		6.5		8.5	9.0										7.5			3.5		2.5

	DI	SW	SW	VX	AW	CM	CO	CO	DG	GX	Y	UU	UV	VZ	WZ	XY	XZ	AM	SS	DELT	RY	UZ	EW
	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LEO	LEO	LEO	LEO	LIB	LIB	LYN	LYR	LYR
MAX	11.0	9.2	9.2	10.9	10.6	8.5	10.5	10.5	10.8	10.1	9.5	11.4	9.5	10.6	11.3	9.5	10.6	9.2	10.4	4.8	11.9	9.8	11.2
MIN	12.0	10.0	10.0	12.3	11.3	9.5	11.0	11.0	12.0	10.4	12.7	12.7	10.2	11.7	12.0	9.9	11.2	9.8	11.3	5.9	13.3	11.0	13.6
DUR	4	3	3	4	5	4	5	5	4	6	5	4	3	4	5	2	3	3	6	7	4	5	5
TOT																							

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

	FL	U	SX	V501	V508	V839	1010	U	U	TY	UX	AQ	AQ	AQ	BB	BB	BX	DI	GP	KW	KW	Z	RT
	LYR	OPH	OPH	OPH	OPH	OPH	OPH	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PEG	PER	PER
MAX	8.7	5.8	10.5	10.9	10.1	8.8	6.2	9.7	9.7	10.5	10.7	10.3	10.3	10.3	10.6	10.6	10.9	9.6	10.2	12.1	12.1	9.9	10.6
MIN	9.5	6.5	11.2	11.8	10.7	9.4	7.0	10.5	10.5	12.6	12.0	13.0	13.0	13.0	11.2	11.2	11.5	10.8	11.0	12.4	12.4	12.4	12.0
DUR	4	5	5	4	3	3	4	3	3	6	5	12	12	12	3	3	3	2	4	3	3	6	4
TOT												4	4	4								2	
								(S)				(2)		(3)		(S)					(S)		
0- 1			3.0		7.5	5.0										8.0	4.5				10.5		
1- 2							5.5		9.0	7.0					6.0			8.5			6.0		
2- 3		10.5	4.5			6.0		7.5							8.0								10.5
3- 4	3.5				1.5	2.0	5.0					6.5	8.5	10.0		5.5	6.5			7.0			
4- 5		2.5	6.0		2.5	7.0			9.0	9.5						7.5							
5- 6	7.5				3.5	3.0	4.5	7.5							5.5		5.5					8.0	
6- 7			7.5		4.0	8.5									7.5			8.0					
7- 8					5.0	4.0	4.0		9.0								5.0				9.0		
8- 9			9.0		6.0	9.5		7.5								7.0				4.5			9.5
9-10		3.5			6.5	5.0	4.0										4.0					10.0	
10-11					7.5				9.0						6.5							5.5	
11-12						6.0	3.5	7.5										8.0		11.0			
12-13							3.5				7.0					6.5	6.0				6.5		
13-14						7.0	3.0		8.5							8.5							
14-15		4.0			2.5	3.0		7.0				8.5	10.5		6.0		5.0					7.5	
15-16					3.5	8.0	2.5				9.0				8.0								
16-17	5.0				4.0	4.0			8.5							6.0	4.0	7.5		8.5			
17-18				10.5	5.0	9.5	2.0	7.0								8.0				4.0			
18-19	9.5			9.5	6.0	5.0								5.5			10.5				9.5		
19-20		5.0		9.0	6.5		2.0		8.5					7.5		6.0					5.0		10.5
20-21				8.0	7.5	6.0	9.5	7.0								5.5				10.5			
21-22				7.5												7.5	5.5	7.0		6.0			
22-23				6.5		7.0	9.0		8.5														
23-24				6.0		3.0		7.0							7.0		4.5	10.0				7.0	
24-25		5.5		5.0	2.5	8.0	9.0																
25-26				4.5	3.5	4.0			8.5			11.0				7.0				8.0			9.0
26-27				3.5	4.0	9.5	8.5	7.0									6.5	6.5	11.0				
27-28	2.5			3.0	5.0	5.0									6.5				10.0		9.0		
28-29				2.0	6.0		8.0		8.5						8.5		5.5	10.0	9.5		4.5		
29-30	6.5	6.5			6.5	6.0		7.0			6.5					6.0			9.0	10.0		7.5	

	RV	ST	XZ	IQ	IT	IU	KW	V432	BETA	Y	RV	U	V505	1968	RS	AO	CC	CC	Y	V	X	RS	RV
	PER	PER	PER	PER	PER	PER	PER	PER	PER	PSC	PSC	SGE	SGR	SGR	SER	SER	SER	SER	SEX	TRI	TRI	TRI	TRI
MAX	10.3	9.7	10.6	7.7	9.9	10.5	10.5	11.0	2.2	9.0	11.3	6.4	6.4	12.3	10.8	10.6	11.1	11.1	9.8	10.9	8.9	10.3	11.4
MIN	12.7	13.2	12.7	8.3	10.5	11.6	11.5	11.7	3.5	12.0	12.0	9.1	7.6	13.3	11.5	12.1	11.7	11.7	10.2	11.9	12.0	11.0	12.5
DUR	8	5	4	5	4	5	4	3	8	7	3	6	5	4	4	4	4	4	3	4	4	4	4
TOT		1										2											

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

	W	TX	TY	TY	UX	UX	VV	XZ	ZZ	AF	W	RU	VV	AG	AH	AH	AK	AW	AW	AX	AZ	AZ	BH
	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMA	UMI	UMI	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR	VIR
MAX	9.1	6.8	11.7	11.7	12.7	12.7	10.1	10.1	9.8	10.8	8.6	10.7	11.7	8.8	9.7	9.7	10.0	10.8	10.8	10.0	11.0	11.0	9.9
MIN	9.9	8.9	12.4	12.4	13.8	13.8	11.0	11.7	11.2	11.6	9.7	11.4	13.5	9.4	10.2	10.2	11.5	11.9	11.9	10.8	11.8	11.8	11.3
DUR	3	6	3	3	1	1	3	3	4	8	7	4	4	4	4	4	4	3	3	4	3	3	4
TOT																							
				(S)												(S)		(S)				(S)	
0- 1	4.5		3.0	7.0	5.5		2.0				3.5	2.5		3.5		6.5	4.0				3.5	8.0	
1- 2	4.5		4.5			5.0		4.5				3.5	5.0			2.0	5.5				5.0		3.5
2- 3	5.0		6.0	1.5	5.0		3.5		5.0			5.0	2.5		2.5		7.0	2.5		6.0	2.0		
3- 4	5.0		7.5	3.5	9.0	4.5						6.0				3.0		4.0	4.5	7.0	3.0		
4- 5	5.0			5.0	4.0	8.5	5.0					7.0			3.5			5.5			4.0		
5- 6	5.0		2.0	6.5	8.5	3.5					6.0	8.5	5.5			4.0	6.5	3.0	7.0	7.0		5.5	5.5
6- 7	5.0		3.5	8.0	3.0	8.0	6.5	2.0				9.5	3.0		4.5		4.5				2.5	6.5	
7- 8	5.0		5.0		7.5	3.0						11.0		5.0		5.0		6.0			3.5	7.5	
8- 9	5.0		6.5	2.5	2.5	7.0									5.0		7.5	3.0	2.5	4.5			
9-10	5.0		8.0	4.0	6.5	2.0			2.5				6.0	3.5		5.5		4.5		6.0			8.0
10-11	5.0	2.0		5.5		6.5					8.5	2.0	3.5		6.0			1.5	6.0	5.0	7.0	3.0	3.5
11-12	5.0		2.5	7.0	6.0		2.0		9.5			3.0				6.5	5.5	3.0	7.5			4.0	
12-13	5.0		4.5	8.5		5.5		4.5				4.0				2.0		4.5		7.5		5.0	
13-14	5.0	3.5	6.0		5.0		3.5					5.5	6.0		2.5			6.0	2.0		2.0	6.5	
14-15	5.0		7.5	3.0	9.5	4.5						6.5	3.5			3.0			3.5		3.5	7.5	5.5
15-16	5.0			4.5	4.5	9.0	5.0					7.5			3.5			5.0	3.0	4.5			
16-17	5.0	5.0	2.0	6.0	8.5	4.0						9.0		5.0		4.0		2.0	6.5		5.5		
17-18	5.0		3.5	7.5	3.5	8.0	6.5	2.0			4.0	10.0	6.5		4.5		5.0	3.5		5.5	7.0	2.5	
18-19	5.0		5.0		8.0	3.0			7.0				4.0	3.0		5.0		5.0				4.0	7.5
19-20	5.0	6.5	6.5	2.0	2.5	7.5	8.0			7.0					5.5		6.5	2.5				5.0	3.0
20-21	5.0		8.0	3.5	7.0	2.5										6.0			4.0		2.0	6.0	
21-22	5.0			5.0	2.0	6.5						2.5	7.0		6.0				5.5		3.0	7.5	
22-23	5.0		2.5	7.0	6.0		2.0				6.5	3.5	4.5		2.0	6.5		2.5	7.0	3.5	4.5		
23-24	5.0		4.0	8.5		6.0		4.5				4.5	2.0	6.5		2.0	4.0	4.0			5.5		5.0
24-25	5.0		5.5		5.5		3.0					6.0			2.5			5.5		6.0	6.5	2.5	
25-26	5.0		7.0	3.0		5.0			4.5			7.0	7.5	5.0		3.0		7.0	3.0		8.0	3.5	
26-27	5.5			4.5	4.5	9.5	4.5					8.5	5.0		3.5				4.5			5.0	
27-28	5.5			6.0	9.0	4.0					8.5	9.5	2.0	3.0		4.0			6.0		2.0	6.0	7.0
28-29	5.5		3.0	7.5	4.0	8.5	6.0	2.0				10.5			4.5			3.0	7.5		3.0	7.0	2.5
29-30	5.5		4.5		8.0	3.5										5.0	3.5	4.5		4.0	4.0		

	MS	MS	NY	Z	AW	AX	AY	BE	BO	BS	BT	BU	CD	V495	V495
	VIR	VIR	VIR	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL	VUL
MAX	9.4	9.4	13.3	7.4	10.8	11.0	11.0	9.9	10.4	11.0	11.8	10.6	11.5	9.6	9.6
MIN	9.7	9.7	14.2	9.2	11.9	12.5	12.9	11.4	13.3	11.5	12.5	11.4	12.6	10.0	10.0
DUR	3	3	1	6	5	5	4	5	4	3	3	3	4	4	4
TOT															
		(S)													(S)
0- 1	6.0	2.0	2.5		10.0					8.0	4.5	4.0	9.0		9.5
1- 2	4.5				5.5	11.0				7.0	8.0	7.5		3.5	
2- 3	3.0	6.5								5.5		10.5	10.5		
3- 4		5.0		3.0						4.5			3.0		
4- 5		3.5			11.0					3.5		3.5		10.0	
5- 6	6.0	2.0			6.5					2.0		7.0	4.0		7.5
6- 7	4.5						9.0	3.0				10.5			
7- 8	3.0	6.5											5.0		
8- 9		5.0	2.0						10.0	4.0	3.0				
9-10		3.5	2.0		7.0			5.5	9.0	7.5	6.5	6.5	7.5		
10-11	6.0	2.0	2.5						8.0		10.0				5.0
11-12	4.5						5.0			6.5			7.5		
12-13	3.0	6.5						8.0		5.5					
13-14		5.0			8.0					4.5		6.0	9.0		
14-15		3.5			3.0					3.0		9.5		5.5	
15-16	6.0	2.0		9.5				10.5					10.0		3.0
16-17	4.5										4.0				
17-18	3.0	6.5			8.5						7.5	5.5			
18-19		5.0	2.0		4.0		10.5		10.0	10.5	9.0	4.0			9.5
19-20		3.5	2.0							9.0				3.0	
20-21	6.0	2.0	2.5	7.5						7.5			5.0		
21-22	4.5				9.5					6.5		5.5			
22-23	3.0	6.5			4.5					5.5		8.5	6.0	9.5	
23-24		5.0					6.0	4.5		4.5					7.0
24-25		3.5							10.0	3.0	3.5		7.5		
25-26	6.0	2.0		5.0	10.0						7.0	5.0			
26-27	4.5				5.5			7.0	8.5		10.5	8.0	8.5		
27-28	3.0	6.5												7.5	
28-29		5.0	2.0						7.5	10.0			10.0		4.5
29-30		3.5	2.0		11.0			9.5		9.0		4.5			