

MAS Eclipsing Binary Ephemeris for May 2025

all times in U.T.

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	RT	TW	UU	WZ	XZ	AB	AD	AD	BD	BX	QX	RY	CX	CZ	EK	EK	XZ	KO	KP	OO	OO	V342	V343
	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AND	AQR	AQR	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	11.3	8.8	10.7	10.3	10.8	10.8	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	11.6	10.1	12.0	11.2	11.3	11.3	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	3	5	3	3	3	3	7	5	4	3	3	7	4
TOT		2																				3	
						(S)	(S)								(S)						(S)		
0- 1			11.0			7.5	8.0					11.0	9.0				9.0			11.0	5.0		
1- 2	7.5					7.5	7.5		10.0													5.5	5.0
2- 3						7.5	7.5		8.0			10.5						10.5				5.5	
3- 4			10.5			7.5	7.0		6.5												6.0	6.5	
4- 5	11.0	10.5		9.5		7.0	6.5					9.5										6.5	
5- 6						7.0	6.5						9.0		11.0		7.5					6.5	
6- 7	8.0		9.5			7.0						8.5										7.0	
7- 8						7.0			10.5	10.0												7.5	
8- 9	5.5								8.5		9.5	8.0					4.0					7.5	
9-10			9.0						7.0						10.5							8.0	
10-11										11.0			9.0						6.5			8.5	10.0
11-12	9.0																					8.5	
12-13																						9.0	6.5
13-14	6.0		10.5						11.0							10.0						9.5	11.0
14-15									9.0													9.5	
15-16									7.5	10.0		9.5	11.0				8.5					10.0	
16-17	9.5								5.5													10.5	
17-18				10.5																		10.5	
18-19	7.0																					11.0	
19-20																						5.0	
20-21			9.5						9.5			9.5						8.5	5.5			5.5	
21-22	10.5								7.5	10.5												6.0	
22-23									6.0													6.0	
23-24	7.5																					6.5	8.0
24-25																11.0						7.0	
25-26												9.5					8.5					7.0	
26-27	11.0							11.0	10.0													7.5	
27-28								11.0	8.0													8.0	
28-29	8.5							10.5	6.5					10.5			5.0					8.0	
29-30			10.5					10.0														8.5	
30-31	5.5							10.0				9.5					8.0					9.0	9.5

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	V346	RY	SX	WW	AP	AP	AR	CL	EM	EP	HP	HP	IM	V459	V459	SS	SS	SS	TU	TU	TY	TY	TZ
	AQL	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO
MAX	9.0	11.7	8.2	5.7	10.9	10.9	6.0	11.7	11.0	10.8	10.8	10.8	7.9	7.7	7.7	10.3	10.3	10.3	11.7	11.7	11.8	11.8	10.6
MIN	10.4	14.0	9.0	6.4	11.4	11.4	6.7	13.2	11.9	11.3	11.5	11.5	8.5	8.1	8.1	11.0	11.0	11.0	12.7	12.7	12.3	12.3	11.1
DUR	4	6	4	5	4	4	5	4	4	3	3	3	4	4	4	18	18	18	3	3	3	3	3
TOT																6	6	6					
						(S)	(S)				(S)				(S)	(2)		(3)		(S)		(S)	
0- 1			3.5			3.0								2.5					3.5	7.0	6.0	2.0	6.5
1- 2							2.5							4.0					2.5	6.5	5.0		4.0
2- 3		2.0			2.5														2.0	6.0	3.5	7.5	
3- 4																				5.0	2.5	6.5	5.5
4- 5						2.5				3.0										4.5		5.0	3.0
5- 6	6.5																			4.0		4.0	
6- 7	9.0				2.0								4.0						7.0	3.5	6.5	3.0	5.0
7- 8										2.0									6.5	2.5	5.5	1.5	2.5
8- 9						2.0									1.5				6.0	2.0	4.5		7.0
9-10															3.0				5.0		3.0	7.0	4.5
10-11				2.5	2.0											8.0	11.0		4.5		2.0	6.0	2.0
11-12					5.0		3.0						3.5						4.0	8.0		4.5	6.5
12-13						1.5													3.0	7.0	7.0	3.5	3.5
13-14						5.0													2.5	6.5	6.0	2.5	
14-15					1.5														2.0	6.0	5.0		5.5
15-16	5.5			3.5	5.0															5.0	3.5	7.5	3.0
16-17	8.0					1.5	2.5						3.5							4.5	2.5	6.5	
17-18	10.5		2.0			4.5				3.0				2.5					8.0	4.0	1.5	5.0	5.0
18-19														4.0		1.5	4.5		7.0	3.0		4.0	2.5
19-20					4.5														6.5	2.5	6.5	3.0	7.0
20-21										2.0									6.0	2.0	5.5	1.5	4.0
21-22						4.5	2.0				3.0		3.0						5.0		4.5		1.5
22-23																			4.5		3.0	7.0	6.0
23-24			3.5		4.0														4.0	7.5	2.0	6.0	3.5
24-25																			3.0	7.0		4.5	
25-26						4.0									2.0				2.5	6.5	7.5	3.5	5.5
26-27	7.0							2.0			2.5	3.0		3.5					2.0	6.0	6.0	2.5	3.0
27-28	9.5				4.0															5.0	5.0		
28-29																				4.5	4.0		5.0
29-30						3.5													7.5	4.0	2.5	6.5	2.0
30-31										3.5									7.0	3.0	1.5	5.5	6.5

all times in U.T.

	TZ	UW	VW	VW	ZZ	AD	AD	BW	BW	44	44	Y	SV	AL	AN	CD	CD	R	XZ	YY	AC	AK	AM
	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CAM	CAM	CAM	CAM	CAM	CAM	CMA	CMI	CMI	CMI	CMI	CMI
MAX	10.6	10.4	10.5	10.5	6.8	9.8	9.8	7.1	7.1	4.7	4.7	10.6	8.6	10.5	9.7	11.6	11.6	6.2	9.7	8.5	11.0	10.1	10.0
MIN	11.1	11.4	11.0	11.0	7.6	10.4	10.2	7.5	7.5	4.9	4.8	12.4	9.4	11.3	10.5	11.8	11.8	6.8	10.2	9.1	11.5	11.5	10.7
DUR	3	3	3	3	5	4	4	5	5	3	3	6	3	5	8	5	5	4	3	4	3	4	5
TOT																							
	(S)			(S)	(S)		(S)		(S)		(S)					(S)							
0- 1	3.0	10.5		4.0	5.5							3.5	2.0	5.5		10.0						3.0	
1- 2		10.5		5.0					7.0	2.0	5.0		6.5		10.5		4.5						
2- 3	5.0	11.0		5.5						3.5			11.0			8.0							
3- 4	2.0	11.0	2.0	6.0				6.0		5.5	2.0	3.0				2.0			3.0				
4- 5	6.5	11.0	2.5	6.5						4.0			6.0	5.5			5.5					3.5	
5- 6	4.0	11.0	3.5	7.5	5.5	2.0				2.5	5.5		10.5			9.0							
6- 7	1.5		4.0	8.0			3.0			4.0		10.5				3.5							
7- 8	6.0		4.5			3.5				6.0	2.5		5.0				7.0	4.0					
8- 9	3.5		5.0				4.5				4.5		9.5	5.0	10.5	1.5						3.0	
9-10			6.0	1.5		5.5				2.5	6.0					5.0							
10-11	5.5		6.5	2.5	5.0		6.0			4.5			4.0				8.5	1.5	1.5				
11-12	2.5		7.0	3.0		7.0			7.0	6.0	3.0		8.5			3.0			3.5				
12-13			8.0	3.5			8.0			1.5	4.5			4.5		6.5						2.0	
13-14	4.5			4.5		8.5		6.0		3.0	6.5		3.5			10.0					3.0		
14-15	2.0			5.0			9.5			5.0	1.5		8.0			4.0		2.5					
15-16	6.5		1.5	5.5	5.0	10.5					3.5					7.5							
16-17	4.0		2.0	6.5			11.0			2.0	5.0	8.5	2.5	4.5		2.0	11.0						
17-18	1.5		3.0	7.0						3.5			7.0				5.5						
18-19	6.0		3.5	7.5						5.5	2.0					9.0		4.0					
19-20	3.5		4.0	8.0							4.0		1.5			3.5							
20-21			4.5		5.0					2.5	5.5		6.0	4.0			7.0				1.5		
21-22	5.0		5.5						7.0	4.0			10.5			10.5		1.5			3.0	1.5	
22-23	2.5		6.0	2.0						5.5	2.5				10.5	4.5	2.0		2.0				2.0
23-24			6.5	2.5				5.5			4.0		5.5				8.0						2.5
24-25	4.5		7.5	3.0						2.5	6.0		10.0	3.5			2.5						3.0
25-26	2.0		8.0	4.0	4.5					4.5						6.0		2.5			2.0		3.5
26-27	6.5			4.5						6.0	3.0	6.5	4.5				9.5				3.0		
27-28	4.0			5.0						1.5	4.5		9.0				4.0						
28-29			1.5	6.0						3.0	6.5			3.0		7.5							
29-30	6.0		2.5	6.5						5.0	1.5		3.5	11.0		2.0	11.0	4.0					
30-31	3.0		3.0	7.0	4.5						3.5		8.0				5.5						

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	RW	TY	RZ	TV	TW	ZZ	AB	CW	CW	DZ	IR	IS	IT	IV	MM	OR	OX	OX	PV	PV	V364	V364	V375
	CAP	CAP	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS	CAS
MAX	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	11.3	11.4	10.1	10.1	10.0	10.0	11.2	11.2	10.1
MIN	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	11.9	12.4	10.9	10.9	10.6	10.6	11.7	11.7	10.9
DUR	5	4	4	4	5	4	4	3	3	4	4	5	5	5	5	4	5	5	3	3	4	4	5
TOT																							
									(S)								(S)		(S)		(S)		
0- 1			7.0		2.5			5.0					6.5	11.0							9.5		4.0
1- 2				11.0		1.5		4.0	7.5	6.0	5.0			11.0									
2- 3		8.0				7.5		3.0	6.5					11.0					9.5				
3- 4				6.5			5.5	1.5	5.5		6.0			11.0	10.0			7.5		7.0			2.5
4- 5					9.5				4.5	9.5				10.5		5.5							
5- 6			2.0					7.5	3.5		7.5			10.5									
6- 7			6.5					6.5	2.5					10.5									
7- 8					6.0	7.0	8.0	5.0	1.5		8.5	10.0		10.5			2.5				8.0		
8- 9								4.0		7.5				10.5				7.0					
9-10		11.0						3.0	7.0		9.5	6.5		10.5		5.0			9.5				
10-11					2.5		1.5	2.0	6.0					10.5	9.0	11.0				7.0		10.0	
11-12			1.5				10.5		5.0	11.0	10.5			10.5									
12-13		7.0	6.0	8.0		6.0			4.0	5.5				10.5			2.0						
13-14			11.0					6.5	3.0					10.5				6.5					10.0
14-15					9.5		4.0	5.5	1.5					10.5		5.0							
15-16								4.5		9.0				10.5		10.5							
16-17								3.5	7.5					10.5					9.5				8.5
17-18					6.0	5.5		2.5	6.5					10.5	7.5					7.0	8.5		
18-19			5.5				6.5	1.5	5.0		5.5			10.0				6.0					
19-20		10.0	10.0						4.0	7.5				10.0									7.5
20-21					2.5			7.0	3.0		6.5	7.5		10.0		10.5					11.0		
21-22				9.5				6.0	2.0					10.0									
22-23						5.0	9.0	5.0		10.5	7.5	3.5		10.0									6.0
23-24	10.5					11.0		4.0		5.5				10.0				5.5	9.5				
24-25			5.0		9.0			3.0	6.5		8.5			10.0						7.0		7.5	
25-26			9.5				2.5	2.0	5.5					10.0	10.5	10.0							5.0
26-27									4.5	9.0	9.5			10.0									
27-28					6.0	4.5		7.5	3.5					10.0								9.5	
28-29						10.0		6.5	2.5		10.5			10.0									3.5
29-30		9.0					5.0	5.0	1.5					10.0									
30-31			4.5	11.0	2.5			4.0		7.0				10.0		9.5			9.5				

	V380	SU	WW	WZ	WZ	XX	ZZ	CW	CW	DK	DL	DV	EG	EK	GK	RW	RW	RZ	RZ	SS	SS	CC	CC
	CAS	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	CEP	COM	COM	COM	COM	COM	COM	COM	COM
MAX	10.4	8.8	11.1	11.7	11.7	8.5	9.3	7.6	7.6	12.2	12.4	11.6	9.6	8.2	6.9	11.0	11.0	10.0	10.0	10.9	10.9	11.0	11.0
MIN	11.1	9.8	11.9	11.3	11.1	9.6	10.0	8.0	8.0	14.2	13.2	12.4	10.6	9.5	7.4	11.6	11.6	10.7	10.7	11.5	11.5	11.9	11.9
DUR	5	4	4	3	3	4	5	5	5	4	5	4	3	6	4	3	3	3	3	4	4	2	2
TOT																							
					(S)				(S)							(S)		(S)		(S)		(S)	
0- 1		8.5			5.5	7.0			6.0	4.0			5.5		3.0	3.0			4.0	7.0	2.0	3.5	
1- 2		6.0		6.5	1.5					4.0		4.5	7.5			1.5	4.5		4.5	3.0	8.0		3.5
2- 3	7.0	3.5		2.5	7.5		3.5			3.5		8.0	10.0				3.5		5.0	8.5	3.5	3.5	
3- 4				8.5	3.5					3.0						5.0	2.0		5.0	4.5	9.5		3.0
4- 5				4.5	9.5		6.5	8.0		3.0	5.0			6.0		3.5		1.5	5.5		5.0	3.0	
5- 6					6.0					2.5			3.0			2.5	5.5	2.0	6.0	6.0			3.0
6- 7	9.0			7.0	2.0		10.0			2.0			5.5				4.0	2.5	6.5	1.5	6.5	2.5	5.0
7- 8				3.0	8.0	7.0		1.5					7.5				3.0	2.5	6.5	7.5	2.5	5.0	2.5
8- 9		11.0		9.0	4.0				10.5			3.5	9.5			4.5	1.5	3.0	7.0	3.5	8.0	2.5	5.0
9-10	2.0	8.5	4.5	5.0	10.0							7.5				3.5		3.5	7.5	9.0	4.0	4.5	2.0
10-11	10.5	6.5			6.0										10.0	2.0	5.0	4.0	8.0	5.0	10.0	2.0	4.5
11-12		4.0		7.0	2.0				4.0				3.0		8.5		4.0	4.0			5.5	4.5	2.0
12-13				3.0	8.0						8.5		5.0		7.0	5.5	2.5	4.5		6.5	1.5	1.5	4.0
13-14	3.5			9.0	4.0								7.5	2.5	5.5	4.0		5.0		2.0	7.0	4.0	1.5
14-15				5.0		7.5							9.5		4.0	3.0		5.0		8.0	3.0		4.0
15-16					6.0			6.0				3.0			2.5	1.5	4.5	5.5	1.5	3.5	8.5	3.5	
16-17				7.0	2.0							7.0					3.5	6.0	2.0	9.5	4.5		3.5
17-18	5.5			3.5	8.5		3.0				6.0	10.5	3.0			5.0	2.0	6.5	2.5	5.5		3.5	
18-19		9.0	9.5	9.5	4.5								5.0		4.0		6.5	2.5		6.0			3.0
19-20		6.5		5.5			6.5		8.5				7.0		2.5	5.5	7.0	3.0	7.0	2.0	3.0		
20-21		4.5		1.5	6.5								9.0				4.0	7.5	3.5	2.5	7.5		3.0
21-22	7.0			7.5	2.5	7.5	10.0										3.0	8.0	4.0	8.5	3.5	2.5	
22-23				3.5	8.5				2.0		3.5	2.5				4.5	2.0		4.0	4.0	9.0	5.0	2.5
23-24				9.5	4.5			10.5				6.0	2.5			3.5		4.5		5.0	2.5	5.0	
24-25				5.5								10.0	4.5		11.0	2.0	5.0		5.0	5.5		5.0	2.0
25-26	9.0			1.5	6.5						9.5		7.0		9.5		4.0		5.5	1.5	6.5	2.0	4.5
26-27				7.5	2.5			4.0					9.0	9.5	8.0	5.5	2.5	1.5	5.5	7.0	2.5	4.5	2.0
27-28		9.5		3.5	8.5								11.0		6.5	4.0	1.5	2.0	6.0	3.0	8.0	1.5	4.5
28-29	2.0	7.0		10.0	5.0	8.0									5.0	3.0		2.5	6.5	9.0	4.0	4.0	1.5
29-30	10.5	4.5		6.0								1.5	2.5		3.5	2.0	4.5	2.5	7.0	4.5	9.5	1.5	4.0
30-31				2.0	7.0				6.5		7.0	5.5	4.5		2.0		3.5	3.0	7.0		5.5	4.0	

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	U	RW	TW	W	W	RV	RV	SX	SX	V	SW	WW	ZZ	AE	BR	CG	DK	KR	KV	V346	V387	V388	V401
	CRB	CRB	CRB	CRV	CRV	CRV	CRV	CRV	CRV	CRT	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG
MAX	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	11.0	10.3	9.2	11.5	11.8	11.5	9.7	10.8
MIN	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	11.8	10.8	10.0	12.6	13.6	12.3	10.3	11.6
DUR	5	4	4	4	4	4	4	3	3	4	5	5	4	4	4	3	4	4	5	5	3	3	4
TOT											2												
					(S)		(S)		(S)														
0- 1			6.5	3.0			4.0	5.0		5.0			6.5	8.5		10.0			6.0		8.0		4.0
1- 2		6.5	11.0	7.0	2.5			3.5	7.5					7.5	4.5			10.5				9.0	8.0
2- 3				1.5	6.5	1.5		2.5	6.5			10.5	3.5	7.0		7.0		7.0			6.0	5.5	
3- 4		11.0	5.0	5.5			3.5		5.0				10.0	6.0									
4- 5		4.5	9.5		5.0	7.0			4.0					5.5			10.5						6.0
5- 6	4.0			4.0				6.5	2.5	2.5			7.0		4.5	11.0	9.0			5.5	11.0		10.0
6- 7		8.5	4.0		3.5		3.5	5.0	1.5								7.5						
7- 8		2.0	8.0	3.0		7.0		4.0		5.5			4.5			8.5	6.0	8.5			9.0	9.0	4.0
8- 9				7.0	2.0			3.0	6.5		6.0		10.5					5.0				5.5	8.0
9-10		6.5	2.5	1.5	6.0		3.0	1.5	5.5						4.5	6.0					7.0		
10-11			7.0	5.5		6.5			4.0				8.0										
11-12		11.0	11.0		4.5			7.0	3.0												5.0		5.5
12-13	2.0	4.0		4.0			2.5	5.5	2.0	3.0		9.5	5.0			9.5	10.5	10.5					9.5
13-14			5.5		3.0	6.5		4.5							4.0		9.0	6.5		11.0		9.5	
14-15		8.5	9.5	2.5	7.0			3.0	7.0	5.5						7.0	7.5		10.5		10.0	6.0	3.5
15-16		2.0		6.5	2.0		2.5	2.0	6.0				8.5				6.5						7.5
16-17			4.0		5.5	6.0			4.5											5.0	8.0		
17-18		6.5	8.5	5.0				7.0	3.5		9.5		6.0		4.0	10.5			7.0				
18-19					4.5		2.0	6.0	2.0									8.5			6.5		5.5
19-20		10.5	3.0	3.5		6.0		5.0		3.5						8.0		4.5				9.5	9.5
20-21		4.0	7.0		3.0			3.5	7.5				9.0				10.5					6.5	
21-22				2.0	7.0		2.0	2.5	6.0	6.0					4.0	5.5	9.0				11.0		3.5
22-23	10.5	8.5	1.5	6.0	1.5	5.5			5.0			8.5	6.5				7.5						7.5
23-24		1.5	5.5		5.5				4.0								6.5	10.0			9.5		
24-25			10.0	4.5			1.5	6.5	2.5	1.5			4.0			9.5		6.5		10.5			
25-26		6.0			4.0	5.5		5.0					10.0		4.0						7.5	10.0	5.5
26-27			4.5	3.0				4.0		4.0						7.0						6.5	9.5
27-28		10.5	8.5	7.0	2.5		1.5	2.5	6.5				7.0							4.0	5.5		
28-29		4.0		2.0	6.5	5.0		1.5	5.5					11.0			10.5						
29-30	8.0		3.0	5.5			7.0		4.0				4.5	10.0	4.0	10.5	9.0	8.0					7.5
30-31		8.0	7.5		5.0			6.5	3.0				10.5	9.5			8.0	4.5			10.5		

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	V456	V466	V466	V477	V477	V548	V704	1034	W	TT	TY	YY	FZ	Z	RZ	TW	UZ	UZ	AI	BH	S	RW	SX
	CYG	CYG	CYG	CYG	CYG	CYG	CYG	CYG	DEL	DEL	DEL	DEL	DEL	DRA	DRA	DRA	DRA	DRA	DRA	DRA	EQU	GEM	GEM
MAX	10.8	10.8	10.8	8.3	8.3	8.9	13.8	9.6	9.4	10.6	9.6	11.0	10.2	10.8	10.0	7.8	9.9	9.9	7.2	8.0	8.0	9.6	10.8
MIN	11.9	11.6	11.6	9.2	8.7	9.7	14.6	10.6	12.7	12.5	10.8	12.0	11.3	13.6	10.9	9.5	10.7	10.7	8.2	8.6	10.0	11.6	11.7
DUR	3	4	4	4	4	5	4	4	7	5	4	4	3	4	3	5	5	5	4	5	5	5	5
TOT									2							1						1	
			(S)		(S)													(S)					
0- 1	10.0						5.5	7.0							10.5				6.5				
1- 2	7.0		7.5				8.5	6.5			8.5	6.0				2.5					8.5		
2- 3	4.5			9.0				6.0					10.5	9.5	2.5		10.0						
3- 4		9.5						5.0							5.0					10.0			
4- 5							5.0	4.5			10.5				7.5								
5- 6					10.0		8.5							3.0	9.5				1.5	5.5			2.5
6- 7		4.5				9.5							8.5						6.5				
7- 8											7.5				1.5			7.5	11.0				
8- 9	10.5		6.5			5.0	5.0					9.5			4.0								
9-10	7.5			10.0			8.5							4.5	6.5								
10-11	5.0	8.5												6.5	8.5							2.0	
11-12															11.0								
12-13			11.0		11.0		5.0					8.5				8.0	5.0		6.0				
13-14							8.5				6.5		9.5	6.5	3.0				11.0				
14-15									11.0						5.5					8.0			
15-16			5.5			10.0									7.5	3.5							
16-17	11.0			10.5			5.0					8.0			10.0							3.5	
17-18	8.0	7.5				5.5	8.0			8.0			7.5	8.0				2.5					
18-19	5.5														2.0				6.0				
19-20			10.0												4.5					11.0			
20-21							4.5				10.0	7.0	11.0		6.5			8.5					3.5
21-22							8.0		10.5					10.0	9.0								
22-23			4.5																				
23-24																							10.0
24-25		6.5			4.5	11.0	4.5					6.0	9.0	3.0	3.0				6.0				
25-26	8.5						8.0								5.5		6.0		10.5	5.5	9.5		
26-27	6.0		9.0			6.0			6.0		9.0				8.0	9.0							
27-28											10.5				10.5								
28-29		11.0		4.5			4.5						7.0	4.5									
29-30							8.0								2.0	4.0							
30-31															4.5			3.5	5.5			3.0	

	TX	WW	AF	AL	RX	SZ	TT	TU	UX	CC	CT	DI	DI	HS	HS	LT	V728	68	WY	WY	AV	DF	DF
	GEM	GEM	GEM	GEM	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HER	HYA	HYA	HYA	HYA	HYA
MAX	10.0	9.8	10.2	9.3	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	4.7	10.3	10.3	10.2	11.0	11.0
MIN	11.9	10.5	11.3	10.0	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	5.4	11.1	11.1	10.6	11.5	11.5
DUR	6	4	4	4	5	4	4	5	5	4	4	6	6	4	4	4	3	5	3	3	4	4	4
TOT								1															
													(S)		(S)					(S)			(S)
0- 1					11.0	5.0	6.0										9.5						
1- 2							4.0			3.0	1.5			9.5			8.5						5.0
2- 3	1.5				6.0				9.0						6.0		7.0			1.5			5.0
3- 4																2.0	5.5	2.5	3.5				4.5
4- 5						7.0		5.0								4.0	4.0						4.5
5- 6						2.5						3.5				6.0	3.0	4.0			2.0		4.0
6- 7										8.0	10.0			7.5		8.0	1.5						4.0
7- 8															4.0	10.0		5.0		2.0	3.5		4.0
8- 9						9.0	11.0				5.0						10.0		3.5				3.5
9-10					8.5	5.0	9.0										8.5	6.5			4.5		3.5
10-11							6.5		3.0							10.5	7.5						3.0
11-12		3.0					4.5							5.5			6.0	7.5			5.5		3.0
12-13							2.5										4.5			2.0			3.0
13-14						7.0		6.5	5.5	6.5			6.5				3.0	8.5	4.0				2.5
14-15						2.5											2.0						2.5
15-16											8.5				8.5			10.0					2.0
16-17	1.5	2.0							7.5					3.5		2.0	10.5						2.0
17-18						9.0					3.5					4.0	9.0	11.0		2.5			2.0
18-19					6.0	4.5				11.0						6.0	7.5		4.0		1.5		1.5
19-20							9.5	10.0						10.0		8.5	6.0						1.5
20-21							7.5	1.5		4.5					6.5	10.5	5.0				3.0		
21-22			4.0				5.5										3.5						5.0
22-23				3.0		7.0	3.5	8.0									2.0			2.5	4.0	5.0	
23-24						2.5																	4.5
24-25											7.0			8.0			10.5				5.5	4.5	
25-26					8.5					9.5					4.5		9.0						4.5
26-27			3.5			9.0					1.5	6.0					8.0						4.0
27-28						4.5			4.0	3.0							6.5		3.0				4.0
28-29																11.0	5.0						3.5
29-30				2.0			10.5	3.5						5.5		2.5	3.5						3.5
30-31	1.5						8.5		6.0							4.5	2.5						3.5

	DI	DK	V470	V470	SW	SW	VX	AR	AW	CM	CO	CO	DG	GX	MZ	MZ	Y	UU	UV	VZ	WZ	XY	XZ	
	HYA	HYA	HYA	HYA	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LAC	LEO	LEO	LEO	LEO	LEO	LEO	LEO	
MAX	11.0	10.5	13.0	13.0	9.2	9.2	10.9	7.3	10.6	8.5	10.5	10.5	10.8	10.1	11.2	11.2	9.5	11.4	9.5	10.6	11.3	9.5	10.6	
MIN	12.0	11.0	13.5	13.5	10.0	10.0	12.3	8.2	11.3	9.5	11.0	11.0	12.0	10.4	12.1	12.1	12.7	12.7	10.2	11.7	12.0	9.9	11.2	
DUR	4	4	3	3	3	3	4	6	5	4	5	5	4	6	4	4	5	4	3	4	5	2	3	
TOT								2																
				(S)		(S)						(S)				(S)								
0- 1							7.5	10.5	7.0								5.5			3.5		6.5		
1- 2					7.5		9.5		10.5				11.0		6.0	11.0		6.0		2.0		5.5	3.0	
2- 3	4.0							10.0						5.0						5.5			6.0	
3- 4													11.0										2.5	6.5
4- 5				4.0				9.5								9.5							6.0	6.0
5- 6			4.0			7.5				8.5		7.0								5.5			2.0	5.5
6- 7				3.5		6.5		9.0										3.0					5.5	5.0
7- 8	2.0		3.5																				2.0	4.5
8- 9		1.5		3.0				8.5	7.0			9.0								5.5		2.5	5.0	3.5
9-10		2.5	3.0						10.5							4.5							1.5	3.0
10-11	4.0	4.0		2.5	7.0			8.0															5.0	2.5
11-12			2.0									11.0						4.0	5.5				1.5	2.0
12-13				2.0				8.0			6.0		6.5		8.0						3.5		4.5	
13-14			1.5							9.0											5.5			
14-15				1.5		7.0	7.0	7.5												5.5				4.5
15-16	2.0						8.5				8.0											3.5		
16-17							10.5	7.0	7.0															4.0
17-18									10.5									2.5		5.0				5.0
18-19	3.5				7.5			6.5			10.0													4.0
19-20																								
20-21		2.0						6.0								4.5				5.5				3.5
21-22		3.0		4.0						10.0									6.0					
22-23		4.0	4.0			7.5		6.0				6.0					3.5					4.5	3.5	
23-24	2.0			3.5		6.5							7.5			8.5				5.5			6.5	6.5
24-25			3.5					5.5	7.0													3.0	3.0	6.0
25-26				3.0					10.5			8.0									5.0		6.5	5.5
26-27	3.5		3.0							5.5										5.5			3.0	5.0
27-28				2.5	7.0													5.0					6.0	4.0
28-29			2.5									10.0											2.5	3.5
29-30				2.0			8.0			10.5	5.0									5.5		5.0	6.0	3.0
30-31			1.5				9.5																2.5	2.5

all times in U.T.

	AM	T	SS	DELT	RY	UZ	EW	FL	RU	RW	AT	BB	BO	EP	U	SX	V501	V508	V839	1010	1010	EF	FR
	LEO	LMI	LIB	LIB	LYN	LYR	LYR	LYR	MON	MON	MON	MON	MON	MON	OPH	OPH	OPH	OPH	OPH	OPH	OPH	ORI	ORI
MAX	9.2	10.2	10.4	4.8	11.9	9.8	11.2	8.7	10.6	9.1	10.6	10.6	10.8	10.5	5.8	10.5	10.9	10.1	8.8	6.2	6.2	12.6	11.0
MIN	9.8	12.6	11.3	5.9	13.3	11.0	13.6	9.5	11.3	11.9	11.4	11.3	12.1	11.1	6.5	11.2	11.8	10.7	9.4	7.0	7.0	14.1	11.9
DUR	3	6	6	7	4	5	5	4	5	5	5	4	5	5	5	5	4	3	3	4	4	6	4
TOT										1			1										
									(S)													(S)	
0- 1	7.5													2.5		8.5	6.5	5.0			3.5		
1- 2													1.5			7.5	7.0						
2- 3	3.5	3.0	10.0													7.0	8.0	6.5	11.0				
3- 4	5.5			7.5												6.0					11.0		
4- 5														5.0		5.5		7.5	11.0				
5- 6	1.5	3.5	7.0		7.0											4.5					10.5		
6- 7	4.0										2.0					4.0	3.0	8.5	10.5				
7- 8	6.5																4.0	4.0			10.0		
8- 9		4.0	4.0		4.0			3.5			2.5						4.5	9.5	10.0				
9-10	2.0					9.5									5.5		5.5	5.0			10.0		
10-11	4.5			7.0				8.0									6.5		9.5				
11-12	7.0	4.5				7.0											7.0	6.0			9.5		
12-13																	8.0		9.5			2.0	
13-14	2.5					4.5												7.5		9.0			
14-15	5.0	5.0													6.5				9.0		2.5		
15-16	7.5		8.5															8.5			8.5		
16-17																2.5	3.0	4.0	8.5				
17-18	3.5	5.5		6.5						2.5		2.5					4.0	9.5			8.5		
18-19	5.5		5.5		5.0											4.0	4.5	5.0	8.0				
19-20															7.0		5.5				8.0		
20-21	1.5	6.0														5.5	6.5	6.0	7.5				
21-22	4.0		2.5		1.5			5.5					2.0				7.0				7.5		
22-23	6.0								2.5							7.0	8.0	7.0	7.5				
23-24		6.5						9.5						1.5							7.0		
24-25	2.0			6.0			10.5								8.0	8.5			8.5	7.0			
25-26	4.5		10.0																4.0		7.0		
26-27	7.0	7.0				10.0	9.5								10.0		3.0	9.5	6.5				
27-28																	11.0	4.0	5.0		6.5		
28-29	2.5		7.0		6.0	7.5	8.0					2.0					10.0	4.5		6.0			
29-30	5.0	7.5												8.5		9.5	5.5	6.0		6.0			
30-31	7.5					5.0	7.0										8.5	6.5		6.0			

all times in U.T.

	KW	V432	Y	RV	UZ	UZ	AV	U	V505	1968	RS	AO	CC	CC	Y	RZ	WY	AM	HU	V	X	RV	W	
	PER	PER	PSC	PSC	PUP	PUP	PUP	SGE	SGR	SGR	SER	SER	SER	SER	SEX	TAU	TAU	TAU	TAU	TAU	TRI	TRI	TRI	UMA
MAX	10.5	11.0	9.0	11.3	9.7	9.7	10.2	6.4	6.4	12.3	10.8	10.6	11.1	11.1	9.8	10.5	11.5	10.4	6.0	10.9	8.9	11.4	9.1	
MIN	11.5	11.7	12.0	12.0	10.6	10.3	10.8	9.1	7.6	13.3	11.5	12.1	11.7	11.7	10.2	11.2	11.7	12.3	6.8	11.9	12.0	12.5	9.9	
DUR	4	3	7	3	4	4	3	6	5	4	4	4	4	4	3	3	4	5	6	4	4	4	3	
TOT								2																
								(S)						(S)										
0- 1				10.0						9.5	5.5	7.5											3.0	
1- 2							3.0	10.0			9.0		10.0		7.5	4.0							3.0	
2- 3													7.0	2.0	8.5								3.0	
3- 4			11.0								7.5	4.0	3.0	9.0									3.0	
4- 5													3.5	10.0	2.5					10.5			3.0	
5- 6				10.0	3.0						7.5		4.5	10.5			3.0						3.0	
6- 7									7.5	10.5	7.0		5.0		5.0								3.0	
7- 8						2.5								6.0									3.0	
8- 9							2.5	4.5				10.5	6.5										3.0	
9-10		1.5			2.5					6.0	7.0	8.0	7.5		3.5								3.0	
10-11	11.0			9.5						9.0		5.0	8.5	2.0									3.0	
11-12	9.5					2.0	3.5					2.0	9.0	3.0	5.5		2.5			11.0			3.0	
12-13											6.5		10.0	3.5	2.0	1.5	1.5						3.0	
13-14					1.5				9.5				10.5	4.5									3.0	
14-15										7.5				5.0	4.5		3.5						3.0	
15-16										10.5	6.5			6.0									3.0	
16-17											11.0			6.5									3.0	
17-18												6.0		7.5	3.0								3.5	
18-19						2.5	8.0			6.5	6.0	3.0	2.0	8.0								10.0	3.5	
19-20									7.5	9.5	11.0		3.0	9.0	5.0								3.5	
20-21													3.5	10.0									3.5	
21-22											6.0		4.5	10.5			1.5			10.0		10.5	3.5	
22-23											10.5		5.0		3.5						11.0		3.5	
23-24										8.0		9.5	6.0										3.5	
24-25	10.5									11.0	6.0	6.5	6.5									11.0	3.5	
25-26	8.5						1.5				10.5	3.5	7.5		2.0								3.5	
26-27				11.0					10.0				8.0	2.0					1.5				3.5	
27-28										6.5	5.5		9.0	3.0	4.5							11.0	3.5	
28-29						2.5				9.5	10.0		9.5	3.5						10.5			3.5	
29-30													10.5	4.5									3.5	
30-31										5.5	10.5			5.0	3.0		1.5						3.5	

all times in U.T.

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

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