

The 2021 AAVSO RR Lyrae Ephemeris

The AAVSO RR Lyrae Ephemeris provides the predicted time of maximum for RR Lyrae and Delta Sct type stars in the AAVSO RR Lyrae observing program. These times appear in Universal Time in the body of the ephemeris table. The time is rounded to the nearest half hour, providing sufficient accuracy to plan observing sessions while, hopefully, leaving sufficient doubt about the exact time in order to eliminate anticipatory bias. This ephemeris is designed for use by observers at American longitudes.

The top rows of the ephemeris table list the name of the star. 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.

Gerard Samolyk, AAVSO Short Period Pulsator Section

REFERENCE

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

Below that, in the row labeled "RISE". This is the approximate time required for the star to rise from minimum to maximum, in hours.

CCD observations of RR Lyrae type stars at all phases of their lightcurves are encouraged. This ephemeris can be used as a guide to determine what portion of the lightcurve is observable on a given night.

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.

	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	VX
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER
MAX	9.3	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	9.9
MIN	10.8	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	10.4
RISE	2	3	3	1	2	2	2	3	2	2	3	2	1	2	2	3	2	3	2	2	3	2	2
0- 1	2.0	0.5			2.5	2.0		13.0	7.5	11.0			10.0	8.0	7.0	2.5		1.5		10.5	2.0	3.0	
1- 2			3.5		7.0	11.0			8.0	12.0			8.0		9.0	5.5		11.0	0.5	7.5	1.0	7.5	
2- 3		4.5			1.5	8.5	8.5	9.5	8.5		6.5				11.5	8.5		9.5			11.5	2.5	
3- 4	4.5		0.0		6.0	6.5			9.0			6.5			11.5	1.0		3.0		10.0	7.0	9.5	
4- 5	2.0		5.5		0.5	4.5			10.0			8.0			2.5		3.5			10.0	9.0	2.0	
5- 6		2.0			5.0	2.5	9.0	12.5	10.5			9.5	11.0	12.5	5.0	4.0				7.0	8.0	7.0	
6- 7			2.0		9.0	0.5			11.0			11.0	8.5		7.0	7.0		3.0	1.5		7.0	2.0	
7- 8	4.0	6.0			4.0	9.0		9.0	12.0		6.5	12.5		11.5	9.5	10.0		1.5			5.5	6.5	
8- 9	1.5				8.0	7.0				7.0					12.0		0.5	11.0		9.5	4.5	1.5	10.0
9-10			4.0	0.5	3.0	5.0				8.0				10.5		2.5	3.0	9.5		7.0	3.5	6.0	
10-11		3.5			7.0	3.0		12.0		9.0					3.0	5.5					2.5	1.0	
11-12	3.5		0.5		2.0	0.5				10.5		6.0	9.5	9.5	5.5	9.0			2.5		1.0	6.0	
12-13	1.0	7.5			6.0	9.5		8.5		11.5	6.5	7.5	7.0		7.5	12.0				9.5	0.0	1.0	
13-14		0.5			1.0	7.5	7.0			12.5		9.0		8.0	10.0			3.0		6.5	10.5	5.5	10.0
14-15			2.5		5.0	5.5						10.5			12.0	4.5	2.5	1.5	1.0		9.0	0.5	
15-16	3.0	4.5			9.5	3.0		11.5				12.0		7.0	1.5	7.5	5.0	11.0		1.0	8.0	5.0	
16-17	0.5				4.0	1.0	7.5						10.0		3.5	10.5		9.5		9.0	7.0	0.0	
17-18			4.5		8.5	10.0		8.0	6.0		6.5		8.0		6.0					6.0	6.0	5.0	
18-19	5.5	2.0			3.0	8.0			6.5						8.0	3.0					4.5	9.5	10.5
19-20	2.5		1.0		7.5	5.5	8.0		7.5						10.5	6.0	2.0		1.5	0.5	3.5	4.5	
20-21		6.0		1.0	2.0	3.5		11.0	8.0	7.5		7.0		12.0	12.5	9.0	4.5	3.0		8.5	2.5	9.0	
21-22					6.5	1.5			8.5	8.5		8.5	10.5		2.0	12.0		1.5		6.0	1.5	4.0	
22-23	5.0		3.0		1.0	10.5	8.5	7.5	9.5	10.0	6.5	10.5	8.5	11.0	4.0	1.5		11.0	0.5		0.0	8.5	
23-24	2.0	3.5			5.5	8.0			10.0	11.0		12.0			6.5	5.0		9.5		0.5	10.5	4.0	10.5
24-25					0.0	6.0			10.5	12.0				9.5	8.5	8.0	1.5		2.5	8.5	9.5	8.5	
25-26			5.0		4.5	4.0	9.0	10.5	11.0						11.0	11.0	4.0			5.5	8.5	3.5	
26-27	4.5	1.0		0.5	8.5	2.0			12.0					8.5							7.0	8.0	
27-28	1.5		1.5		3.5	10.5		7.0			6.5		9.0		2.5	3.5		3.0	1.0	0.0	6.0	3.0	
28-29		5.0			7.5	8.5		13.0				7.0	7.0	7.5	4.5	6.5		1.5		8.0	5.0	8.0	11.0
29-30					2.5	6.5						8.5			7.0	9.5	0.5	11.0			4.0	3.0	
30-31	4.0		3.5		6.5	4.5		10.0				10.0			9.0	12.5	3.5	9.5			2.5	7.5	

	AR	DL	DY	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	AV	RV
	HER	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	10.6	11.0	10.2	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	9.9	10.1
MIN	11.6	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	10.9	11.2
RISE	2	1	1	2	2	3	2	2	2	2	3	1	2	2	2	3
0- 1		12.5			4.5			6.5			4.5	0.5				6.0
1- 2					6.0			4.0	8.0	5.5	9.5	2.5			2.0	4.5
2- 3	10.0		10.0	4.0	7.0	8.0	11.5					4.5		10.5		
3- 4	8.5	11.5		6.0	8.0		11.0	10.5		6.0	5.0	6.5		11.0	0.5	
4- 5	7.0			8.0	9.5		10.0	8.0	11.0		10.0	8.5		11.5		11.0
5- 6				9.5	10.5	8.5	9.5	6.0		6.5		2.0		12.0		9.5
6- 7		10.5	10.5	11.5	11.5		9.0	3.5	8.0		5.5	4.0		0.5		8.0
7- 8							8.5			7.0	10.5	6.0	12.5			6.5
8- 9						9.0	8.0	10.0	5.5			8.0			2.5	5.0
9-10	11.0			4.0		3.0	7.5	7.5	11.5	7.5	6.0	1.5				
10-11	9.5			5.5	3.5		7.0	5.5			10.5	3.5			1.5	
11-12	8.0			7.5	5.0	9.5	6.5	3.0	8.5	8.0		5.5	11.5			
12-13	6.5			9.0	6.0	3.5	6.0				6.0	7.5	1.5		0.0	10.0
13-14		12.5		11.0	7.0		5.5	9.5	5.5	8.5	11.0	1.0				8.5
14-15					8.0	10.0	5.0	7.0	11.5			3.0				7.0
15-16					9.5	4.0	4.5	5.0		9.0	6.5	5.0	11.0			5.5
16-17		11.5		3.5	10.5		4.0	2.5	9.0		11.5	7.0	0.5			3.5
17-18	11.0			5.5	11.5	10.5	3.5			9.0		0.5			2.0	
18-19	9.5			7.0		4.5		9.0	6.0		7.0	2.5				
19-20	8.0	10.5		9.0				6.5	12.0	9.5	11.5	4.5			1.0	10.5
20-21				10.5		10.5		4.0				6.5				9.0
21-22				12.5	3.5	5.0			9.0	10.0	7.0	8.5				7.5
22-23					5.0			10.5			12.0	2.0				6.0
23-24					6.0	11.0		8.0	6.0	10.5		4.0				4.0
24-25				5.0	7.0	5.0	11.5	6.0	12.0		7.5	6.0	12.5		2.5	
25-26	10.5			6.5	8.0		11.0	3.5		11.0	12.5	8.0		10.5		
26-27	9.0			8.5	9.5	11.5	10.5		9.5		3.0	1.0		11.0	1.5	11.0
27-28	7.5		9.5	10.0	10.5	5.5	10.0	10.0		11.5	8.0	3.5		11.5		9.5
28-29				12.0	11.5		9.5	7.5	6.5		12.5	5.5	11.5	0.0	0.5	8.0
29-30		12.0				12.0	9.0	5.5	12.5	12.0	3.0	7.5	1.5			6.5
30-31						6.0	8.0	3.0			8.0	0.5				4.5

AAVSO RR Lyrae Ephemeris for February 2021

all times in U.T.

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	SW	XX	AT	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	TW	VX	
	AND	AND	AND	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER	HER	
MAX	9.3	10.3	10.8	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	10.5	9.9	
MIN	10.8	11.6	11.5	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	11.8	10.4	
RISE	2	3	3	2	2	2	3	2	2	3	2	1	2	2	3	2	3	2	2	3	2	2	2	
0- 1	1.0	2.5		1.5	2.5				7.0		11.5			11.5	2.0		7.5		10.5	1.5	2.5			
1- 2				5.5	0.0		6.5		8.0	6.5		10.0	5.0	0.5	5.0				7.5	0.5	7.0	9.0		
2- 3				0.5		7.0	12.5	4.0	9.5	5.0		7.5	12.5	2.5	8.0				5.0	10.5	2.0			
3- 4	3.5			4.5	7.0			5.0	10.5	3.5		5.5		5.0		0.0				9.5	7.0	9.0	9.0	
4- 5	1.0		2.0	9.0	5.0		9.5	5.5	11.5		5.0		11.0	7.5	1.0	2.5	1.5	0.5	10.0	8.5	2.0			
5- 6		3.5		3.5	2.5	7.5		6.0			6.5			9.5	4.0		11.0		7.5	7.5	6.5	9.0		
6- 7				8.0	0.5		6.0	6.5		6.5	8.0	10.5	10.0	12.0	7.0				4.5	6.0	1.5			
7- 8	3.0		4.0	2.5		5.0	12.0	7.5		5.0	9.5	8.5		1.0	10.0					5.0	6.0	9.0		
8- 9	0.5	1.0		7.0	7.5	8.0		8.0		3.5	11.0	6.5	9.0	3.0						9.5	4.0	1.0	9.0	
9-10			0.5	1.5	5.0		9.0	8.5			12.5			5.5	2.5	2.0			7.0	3.0	6.0	9.0		
10-11		5.0		6.0	3.0	5.5		9.5	5.5				8.0	7.5	5.5				4.0	1.5	1.0			
11-12	2.5			0.5	1.0	8.5	5.5	10.0	6.5	6.5				10.0	8.5		1.5				0.5	5.5	9.0	
12-13			2.5	5.0			11.5	10.5	7.5	5.0	4.5	9.0	6.5	12.5			11.0	0.0	9.5	11.0	0.5			
13-14		2.5		9.0	7.5	5.5		11.5	9.0	3.5	6.0	7.0		1.5	1.0		9.5		6.5	9.5	5.0	9.0	9.5	
14-15				4.0	5.5	9.0	8.0	12.0	10.0		7.5		5.5	3.5	4.0	1.5	7.5		4.0	8.5	0.0			
15-16	2.0			8.0	3.5				11.0		9.0		12.5	6.0	7.0						7.5	5.0	9.0	
16-17				3.0	1.5	6.0			12.0	6.5	10.5			8.0	10.5				9.0	6.5	9.5			
17-18			1.0	7.0			11.0			5.0	12.0	9.5	11.5	10.5					6.5	5.0	4.5	9.0		
18-19		4.0		2.0	8.0					3.5		7.5			3.0		1.5		3.5	4.0	9.0		9.5	
19-20	1.5			6.0	6.0	6.5	7.5					5.5	10.5	2.0	6.0	1.0	11.0				3.0	4.0	9.0	7.5
20-21			3.0	1.0	4.0						4.0			4.0	9.0		9.5		8.5	2.0	9.0			
21-22		1.5		5.0	2.0			4.0	5.0	6.5	5.5		9.5	6.5			7.5		6.0	0.5	4.0	8.5		
22-23				9.0		7.0	10.5	5.0	6.0	5.0	7.0	10.0		8.5	1.5					11.0	8.5			
23-24	1.0			4.0	8.5			5.5	7.0	3.5	8.5	8.0	8.0	11.0	4.5					10.0	3.5	8.5	9.5	
24-25				8.0	6.5		7.0	6.0	8.5		10.5	6.0		0.0	7.5	0.5			8.5	9.0	8.0		7.5	
25-26			1.5	3.0	4.5	7.5		7.0	9.5		12.0		7.0	2.5	10.5	3.0	1.5	0.5	5.5	7.5	3.0	8.5		
26-27	3.5	3.0		7.0	2.0			7.5	10.5	6.5				4.5	0.0		11.0			6.5	8.0			
27-28	0.5			2.0	0.0	5.0	10.0	8.0	11.5	5.0		11.0	6.0	7.0	3.0		9.0			5.5	3.0	8.5		

	AR	DL	DY	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	AV	RV
	HER	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	10.6	11.0	10.2	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	9.9	10.1
MIN	11.6	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	10.9	11.2
RISE	2	1	1	2	2	3	2	2	2	2	3	1	2	2	2	3
0- 1			10.0	4.5	2.5		7.5	1.0	9.5	12.5		2.5				3.0
1- 2		11.0		6.5	3.5		7.0	9.5		4.5	3.5	5.0	11.0			1.5
2- 3	10.5			8.0	5.0	6.5	6.5	7.0	6.5		8.5	7.0				
3- 4	9.0			10.0	6.0		6.0	5.0	12.5	5.0		0.0				10.0
4- 5	7.5	10.0	10.0		7.0		5.5	2.5	3.5		4.0	2.0				8.5
5- 6	6.0		7.5		8.5	7.0	5.0		10.0	5.5	9.0	4.0	10.0			7.0
6- 7				2.5	9.5	1.0	4.5	9.0				6.5				5.0
7- 8		9.0		4.0	10.5		4.0	6.5	7.0	6.0	4.0	8.5				3.5
8- 9			10.5	6.0		7.0	3.5	4.5	13.0		9.0	1.5				2.0
9-10			8.0	7.5		1.5	3.0	2.0	4.0	6.0		3.5	9.5			
10-11	10.0			9.5	1.5		2.5	10.5	10.0		4.5	5.5	12.5			10.5
11-12	8.5	12.5			2.5	7.5	2.0	8.5		6.5	9.5	8.0				9.0
12-13	7.0				3.5	1.5	1.5	6.0	7.0			1.0				7.5
13-14	6.0		8.0	2.0	5.0			3.5		7.0	5.0	3.0	8.5	8.5	0.5	5.5
14-15		11.5		3.5	6.0	8.0		1.5	4.0		10.0	5.0	12.0	9.0		4.0
15-16				5.5	7.0	2.0		10.0	10.5	7.5		7.0		9.5		2.5
16-17				7.5	8.5			7.5			5.5	0.5		10.5		
17-18		10.5	8.5	9.0	9.5	8.5		5.5	7.5	8.0	10.0	2.5		11.0		11.0
18-19	10.0				10.5	2.5	10.0	3.0			0.5	4.5	11.0	11.5		9.5
19-20	8.5						9.5	1.0	4.5	8.5	5.5	6.5		12.0		8.0
20-21	7.0	9.5		1.5		9.0	9.0	9.5	10.5		10.5	0.0				6.0
21-22	5.5		9.0	3.5	1.5	3.0	8.5	7.0		9.0	1.0	2.0				4.5
22-23				5.0	2.5		8.0	5.0	7.5		6.0	4.0	10.5			3.0
23-24		8.5		7.0	3.5	9.5	7.5	2.5		9.5	11.0	6.0				1.5
24-25		13.0		8.5	5.0	3.5	7.0		4.5		1.5	8.0				
25-26	11.0		9.0	10.5	6.0		6.5	9.0	11.0	10.0	6.5	1.5				10.0
26-27	9.5			7.0	9.5	5.5	6.5				11.0	3.5	9.5			8.5
27-28	8.0	12.0			8.5	4.0	5.0	4.5	8.0	10.5	1.5	5.5	12.5			6.5

AAVSO RR Lyrae Ephemeris for March 2021

all times in U.T.

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	SW	XX	AT	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	TW	VX
	AND	AND	AND	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER	HER
MAX	9.3	10.3	10.8	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	10.5	9.9
MIN	10.8	11.6	11.5	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	11.8	10.4
RISE	2	3	3	2	2	2	3	2	2	3	2	1	2	2	3	2	3	2	2	3	2	2	2
0- 1				6.0		8.0		8.5		3.5	3.5	9.0		9.0	6.0		7.5		8.0	4.0	7.5		10.0
1- 2				1.0	7.0		6.5	9.5		2.0	5.5	6.5	4.5				6.0		5.5	3.0	2.5	8.5	8.0
2- 3				5.0	4.5	5.0		10.0			7.0	4.5	12.0	0.5					2.5	2.0	7.0		5.5
3- 4				9.5	2.5	8.5	3.5	10.5	3.5	6.5	8.5		3.5	3.0	2.0				10.5	1.0	2.0	8.5	
4- 5			11.0	4.0	0.5		9.5	11.5	4.5	5.0	10.0		11.0	5.0	5.0				8.0	11.0	7.0		
5- 6			2.0	8.5		5.5	12.0	5.5	3.5	11.5	9.5		9.5	7.5	8.0		11.0	10.0	5.0	10.0	2.0	8.5	10.0
6- 7	1.5			3.0		9.0	6.0		6.5	2.0		7.5	9.5	9.5			9.0		2.5	9.0	6.5		8.0
7- 8				7.5	5.0	3.0	12.0		8.0			5.5			0.5		7.5		10.0	8.0	1.5	8.5	6.0
8- 9				2.0	3.0	6.0			9.0	6.5	3.5	3.0	8.5	1.0	3.5		6.0		7.5	6.5	6.0		
9-10				6.5	1.0		9.0	2.5	10.0	5.0	5.0			3.5	6.5				4.5	5.5	1.0	8.5	
10-11				1.0		3.5		3.0	11.0	3.5	6.5	10.0	7.5	5.5					2.0	4.5	6.0		10.5
11-12		3.0		5.5		6.5	5.5	3.5	12.0	2.5	8.0	8.0							10.0	3.5	1.0	8.5	8.0
12-13			11.5		5.5		11.5	4.0			9.5	6.0	6.0	10.0	2.0	1.5	11.0		7.0	2.0	5.5		6.0
13-14				4.5	3.5	4.0		5.0		7.0	11.0	4.0			5.5		9.0	9.5	4.5	1.0	0.5	8.5	
14-15	1.5			8.5	1.5	7.0	8.5	5.5		5.5			5.0	1.5	8.5		7.5			11.5	5.0		
15-16				3.5				6.0	4.0	4.0		10.5	12.5	3.5			6.0		9.5	10.0		8.0	10.5
16-17				7.5		4.5	5.0	7.0	5.0	2.5	3.0	8.5	4.0	6.0	1.0				7.0	9.0	5.0		8.5
17-18				2.5	6.0	7.5	11.0	7.5	6.0		4.5	6.5	11.0	8.0	4.0	1.0			4.0	8.0		8.0	6.5
18-19	1.0		1.0	6.5	4.0			8.0	7.5	7.0	6.0	4.5		10.5	7.0					7.0	4.5		
19-20		2.0		1.5	2.0	5.0	8.0	9.0	8.5	5.5	7.5		10.0				11.0		9.0	5.5		8.0	
20-21			12.0	5.5		8.0		9.5	9.5	4.0	9.0			2.0			9.0		6.5	4.5	4.0		11.0
21-22						4.5	10.0	10.5	2.5	10.5	9.5	9.0	4.0	2.5			7.5		3.5	3.5	9.0	8.0	8.5
22-23	0.5			4.5	6.5	5.0	10.5	10.5	11.5		12.0	7.0		6.5	5.5		6.0			2.5	4.0		6.5
23-24				9.0	4.5	8.5		11.5		7.0		5.0	8.0	8.5	8.5				9.0	1.0	8.5	8.0	
24-25		3.0		3.5	2.0		7.5	12.0		5.5	2.5								6.0		3.5		
25-26				8.0		5.5				4.0	4.0		6.5		1.0				3.5	10.5	8.0	8.0	
26-27			1.5	2.5		9.0	4.0		3.5	2.5	5.5	10.0		2.5	4.5		10.5	10.0		9.0	3.0		9.0
27-28		0.5		7.0	7.0	3.0	10.0		4.5		7.0	8.0	5.5	4.5	7.5		9.0		8.5	8.0	8.0	8.0	6.5
28-29			12.5	1.5	4.5	6.0		2.5	5.5	7.0	8.5	6.0		7.0			7.5		6.0	7.0	3.0		
29-30				6.0	2.5		7.0	3.0	7.0	5.5	10.5	3.5	4.5	9.0			6.0		3.0	6.0	7.5	8.0	
30-31				0.5	0.5	3.5		3.5	8.0	4.0	12.0		11.5		3.0					4.5	2.5		

	AR	DL	DY	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	RV
	HER	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	UMA
MAX	10.6	11.0	10.2	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	10.1
MIN	11.6	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	11.2
RISE	2	1	1	2	2	3	2	2	2	2	3	1	2	2	3
0- 1	6.5			3.0	9.5		4.5	2.0		2.5	6.5	7.5			5.0
1- 2	5.5	6.5	9.5	4.5			4.0	10.5	5.0	10.5		1.0			3.5
2- 3	4.0	11.0	7.0	6.5		4.0	3.5	8.5	11.0	3.0	2.0	3.0	8.5		2.0
3- 4				8.5			3.0	6.0	2.0		7.0	5.0	12.0		0.5
4- 5					1.5		2.5	3.5	8.0	3.5		7.0			10.5
5- 6	11.0	10.0	9.5		2.5	4.5	2.0	1.5			2.5	0.5		7.0	9.0
6- 7	9.5		7.0	1.0	4.0		1.5	10.0	5.5	3.5	7.5	2.5	8.0	7.5	7.0
7- 8	8.0			2.5	5.0		1.0	7.5	11.5			4.5	11.0	8.0	5.5
8- 9	6.5	9.0		4.5	6.0	5.0	0.5	5.5	2.5	4.0	2.5	6.5		9.0	4.0
9-10	5.0		10.0	6.0	7.0			3.0	8.5		7.5	8.5		9.5	2.5
10-11	3.5		7.5	8.0	8.5			1.0		4.5		2.0	7.0	10.0	1.0
11-12		8.0			9.5	5.5		9.5	5.5		3.0	4.0	10.5	10.5	11.0
12-13		12.0						7.0		5.0	8.0	6.0		11.0	9.5
13-14	10.5		10.5					5.0	2.5			8.0		11.5	7.5
14-15	9.0	7.0	7.5	2.0		6.0		2.5	8.5	5.5	3.5	1.5		12.0	6.0
15-16	7.5	11.0		4.0	1.5						8.5	3.5	9.5		4.5
16-17	6.0			6.0	2.5		8.0	9.0	6.0	6.0		5.5			3.0
17-18	5.0		10.5	7.5	4.0	6.0	7.5	6.5			3.5	7.5			1.5
18-19	3.5	10.0	8.0		5.0		7.0	4.5	3.0	6.5	8.5	1.0			
19-20					6.0		6.5	2.0	9.0			3.0	9.0		10.0
20-21					7.0	6.5	6.0	10.5		7.0	4.0	5.0	12.0		8.0
21-22	10.5	9.0		2.0	8.5	0.5	5.5	8.5	6.0		9.0	7.0			6.5
22-23	9.0		8.5	3.5	9.5		5.0	6.0		7.5					5.0
23-24	7.5		5.5	5.5		7.0	4.5	3.5	3.0		4.5	2.5	8.0		3.5
24-25	6.0	8.0		7.0		1.0	3.5	1.5	9.0	8.0	9.5	4.5	11.0		2.0
25-26	4.5						3.0	10.0				6.5			0.5
26-27	3.0		8.5		1.5	7.5	2.5	7.5	6.5	8.0	5.0	8.5			10.5
27-28		7.0	6.0		2.5	1.5	2.0	5.5			9.5	2.0	7.0	6.5	8.5
28-29		11.5		1.5	4.0		1.5	3.0	3.5	8.5		4.0	10.5	7.5	7.0
29-30	10.0			3.0	5.0	8.0	1.0	1.0	9.5		5.0	6.0		8.0	5.5
30-31	8.5		9.0	5.0	6.0	2.0	0.5	9.5		9.0		8.0		8.5	4.0

AAVSO RR Lyrae Ephemeris for April 2021

all times in U.T.

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	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	XZ	DM	RW	XZ	RR	TW	VX	AR
	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CYG	CYG	DRA	DRA	GEM	HER	HER	HER
MAX	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.1	11.2	11.0	9.6	10.7	10.5	9.9	10.6
MIN	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.5	12.7	12.0	10.3	11.9	11.8	10.4	11.6
RISE	3	3	1	2	2	2	3	2	2	3	2	1	2	2	3	3	2	2	3	2	2	2	2
0- 1				5.0		6.5	3.5	4.5	9.0	2.5		10.5	3.0		6.0			8.0	3.5		8.0	9.0	7.0
1- 2								9.5	5.0	10.0		2.0	8.5	10.5	3.0			5.5	2.5	2.5		7.0	6.0
2- 3		11.0		4.0		4.0		5.5	11.0	7.0	3.5	6.5	2.0	5.0		10.5		2.5	1.5	7.0	8.0	5.0	4.5
3- 4					3.0	7.0	6.0	6.0		5.5	5.5	4.5	9.5	7.5	1.5	9.0	9.5	10.5		2.0			3.0
4- 5			11.0	3.0		1.0		7.0		4.0	7.0	2.5			4.5	7.5		8.0	10.5	6.5	7.5		1.5
5- 6				7.0		4.5	3.0	7.5	2.0	2.5	8.5		8.0			6.0		5.0	9.5	1.5		9.5	11.5
6- 7				2.0		7.5	9.0	8.0	3.0		10.0	9.0		1.0		4.5	8.0	2.5	8.5	6.0	7.5	7.0	10.0
7- 8		9.5		6.0		1.5		9.0	4.0	7.0	11.5	7.0	7.0	3.5				10.5	7.0	1.5		5.0	8.5
8- 9					3.5	4.5	5.5	9.5	5.0	5.5		5.0		5.5	3.5			7.5	6.0	6.0	7.5		7.0
9-10				5.0	1.5	8.0	11.5	10.0	6.5	4.0	2.0	3.0	6.0	8.0	6.5	10.5		5.0	5.0	1.0			5.5
10-11	11.5	11.5	10.0			2.0	2.5	11.0	7.5	2.5	3.5					9.0		2.0	4.0	5.5	7.5	9.5	4.0
11-12				4.0		5.0	8.5	11.5	8.5		5.0	9.5	4.5			7.5	9.0	10.0	2.5			7.5	2.5
12-13						8.5			9.5	7.0	6.5	7.5		1.5	2.0	6.0		7.0	1.5	5.0	7.5	5.0	1.0
13-14				3.0	4.0	2.5	5.0		10.5	5.5	8.0	5.5	3.5	4.0	5.0	4.5		4.5					11.0
14-15				7.0	1.5	5.5	11.0	1.0	12.0	4.0	9.5	3.5	11.0	6.0			7.5	1.5	10.5	5.0	7.5		9.5
15-16		10.0		2.0		9.0	2.0	1.5		2.5	11.0	1.5	2.5	8.5				9.5	9.5			9.5	8.0
16-17			9.5	6.0		3.0	8.0	2.5	1.5	1.0		10.5	9.5			10.5	9.5	7.0	8.5	4.5	7.5	7.5	6.5
17-18				1.0		6.0		3.0	2.5	7.0	1.5	8.5	1.5		3.5	9.0		4.0	7.5			5.5	5.5
18-19				5.0	4.0		4.5	3.5	3.5	5.5	3.0	6.0	8.5	2.0	6.5	7.5		1.5	6.0	4.0	7.5	3.5	4.0
19-20					2.0	3.5	10.5	4.5	4.5	4.0	4.5	4.0		4.0		6.0	8.0	9.5	5.0				2.5
20-21				4.0		6.5	1.5	5.0	6.0	2.5	6.0	2.0	7.5	6.5		4.5		6.5	4.0	4.0	7.5	10.0	1.0
21-22			10.5				7.5	5.5	7.0	1.0	7.5			8.5	2.5			4.0	3.0			8.0	11.0
22-23	1.0			3.0		4.0		6.0	8.0	7.0	9.0	9.0	6.0		5.5			1.0	1.5	3.5	7.5	5.5	9.5
23-24	12.0	10.5		7.5	4.5	7.0	4.0	7.0	9.0	5.5	10.5	7.0				10.5		9.0				3.5	8.0
24-25				2.0	2.5	1.0	10.0	7.5	10.0	4.0		5.0	5.0	2.5		9.0	9.0	6.0	11.0	3.5	7.0		6.5
25-26				6.5		4.5		8.0	11.5	2.5	1.0	2.5		4.5	1.0	7.5		3.5	9.5			10.0	5.0
26-27				1.0		7.5	7.0	9.0		1.0	2.5		4.0	7.0	4.0	6.0			8.5	3.0	7.0	8.0	3.5
27-28			10.0	5.5		1.5		9.5		7.0	4.0	9.5	11.0		7.0	4.0	7.5	8.5	7.5			6.0	2.0
28-29					5.0	4.5	3.5	10.0	2.0	5.5	5.5	7.5	3.0					6.0	6.5	2.5	7.0	3.5	
29-30				4.5	3.0	8.0	9.5	11.0	3.0	4.0	7.0	5.5	10.0				10.0	3.0	5.0				10.5

	DL	DY	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	AV	RV
	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	11.0	10.2	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	9.9	10.1
MIN	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	10.9	11.2
RISE	1	1	2	2	3	2	2	2	2	3	1	2	2	2	3
0- 1	10.5	6.5		7.5			7.0	6.5	1.0		1.5	6.5	9.0		2.5
1- 2		4.0					5.0			5.5	3.5	9.5	9.5		1.0
2- 3	5.0				2.5		2.5	3.5	1.5		5.5		10.0		11.0
3- 4	9.5	9.5									7.5		10.5		9.0
4- 5		6.5	1.0				9.0		2.0	6.0		5.5	11.0	9.0	7.5
5- 6		4.0	3.0		3.0		6.5	7.0			3.0	9.0	11.5		6.0
6- 7	8.5		4.5	1.5			4.5		2.5	1.0	5.0				4.5
7- 8		9.5	6.5	2.5			2.0	4.0		6.0	7.0				3.0
8- 9		7.0		4.0	3.0				3.0			5.0			1.5
9-10	7.5	4.5		5.0			8.5	1.0		1.5	2.5	8.0			
10-11				6.0			6.0	7.0	3.5	6.5	4.5	11.5			10.0
11-12		10.0		7.5	3.5	6.0	4.0				6.5				8.0
12-13	6.5	7.5	2.5			5.5	1.5	4.0	4.0	2.0	8.5				6.5
13-14	11.0	4.5	4.0			5.0				7.0	2.0	7.5		8.5	5.0
14-15			6.0		4.0	4.5	8.0	1.5	4.5		4.0	10.5			3.5
15-16	5.5	10.0				4.0	5.5	7.5		2.0	6.0		4.5		2.0
16-17	10.0	7.5				3.5	3.0		5.0	7.0	8.0		5.5		
17-18		5.0		1.5	4.5	3.0	1.0	4.5			1.0	6.5	6.0		10.5
18-19	4.5			2.5		2.5			5.5	2.5	3.0	9.5	6.5		8.5
19-20	9.0	10.5	2.0	4.0		2.0	7.0	1.5		7.5	5.5		7.0		7.0
20-21		8.0	4.0	5.0	5.0	1.0	5.0	7.5	5.5		7.5		7.5	9.0	5.5
21-22		5.5	5.5	6.0			2.5			3.0		5.5	8.0		4.0
22-23	8.0			7.5				4.5	6.0		2.5	9.0	8.5		2.5
23-24					5.0		9.0				4.5		9.0		1.0
24-25		8.5					6.5	2.0	6.5	3.0	7.0		9.5		11.0
25-26	7.0	5.5					4.5	8.0				5.0	10.0		9.0
26-27	11.5		1.5		5.5		2.0		7.0		2.0	8.0	10.5		7.5
27-28			3.5					5.0		3.5	4.0	11.5	11.0		6.0
28-29	6.0	8.5	5.5	1.5			8.5		7.5		6.0		11.5		4.5
29-30	10.5	6.0		3.0	6.0		6.0	2.0			8.5			8.5	3.0

	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	XZ	DM	RW	XZ	RR	TW	VX
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CYG	CYG	DRA	DRA	GEM	HER	HER
MAX	9.3	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.1	11.2	11.0	9.6	10.7	10.5	9.9
MIN	10.8	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.5	12.7	12.0	10.3	11.9	11.8	10.4
RISE	2	3	3	1	2	2	2	3	2	2	3	2	1	2	2	3	3	2	2	3	2	2	2
0- 1	9.5						2.0			4.0	2.5	9.0	3.5	1.5	3.0	2.5	10.5	6.0		4.0	2.5	7.0	10.5
1- 2		10.5	11.0		3.5		5.0	6.5		5.5		10.5		9.0	5.0		9.0		8.5	3.0		2.5	8.0
2- 3							8.5			6.5	7.0		10.0				7.5	8.5	5.5	2.0	2.0	7.0	6.0
3- 4			7.0	9.5	2.5		2.5	3.0		7.5	5.5		8.0	8.0			6.0		3.0			2.0	4.0
4- 5	9.0			7.5			5.5	9.0	1.5	8.5	4.0	2.0	6.0				4.0			11.0	1.5	7.0	2.0
5- 6					1.5		9.0		2.5	9.5	2.5	3.5	4.0	6.5		4.5	2.5	7.0	8.0	10.0		2.0	10.5
6- 7			9.5				3.0	6.0	3.0	11.0		5.5	2.0		3.5				5.5	9.0		7.0	8.5
7- 8							6.0		3.5		7.0	7.0	11.0	5.5	5.5		10.5	9.5	2.5	7.5		2.0	6.5
8- 9				10.5	4.5			2.5	4.5		5.5	8.5	8.5				9.0	5.5	10.5	6.5		7.0	4.0
9-10		9.5		8.5			3.5	8.5	5.0	1.5	4.0	10.0	6.5	4.5		3.0	7.5		7.5	5.5		2.0	2.0
10-11					3.5	1.5	6.5		5.5	2.5	2.5		4.5				6.0	8.0	5.0	4.0		7.0	11.0
11-12			7.5					5.5	6.5	3.5			2.5	3.0	1.5		4.0		2.0	3.0		2.0	8.5
12-13					2.5		4.0	11.0	7.0	5.0	7.0	2.0		10.5	4.0		2.5		10.0	2.0		7.0	6.5
13-14							7.0	2.0	7.5	6.0	5.5	3.5	9.5	2.0	6.0	1.5		6.5	7.5		5.0		4.5
14-15		11.0	10.0	10.0	1.5			8.0	8.0	7.0	4.0	5.0	7.5	9.5		5.0	10.5		4.5	11.0		7.0	2.0
15-16	10.0			8.0		2.0	4.0		9.0	8.0	2.5	6.5	5.0				9.0	9.0	2.0	10.0	4.5		
16-17							7.5	5.0	9.5	9.0		8.0	3.0	8.0			7.5		10.0	9.0		6.5	9.0
17-18					5.0		1.5	10.5	10.0	10.5	7.0	9.5			2.0		6.0		7.0	8.0	4.5		6.5
18-19							4.5	1.5	11.0		5.5	11.0	10.0	7.0	4.5	3.5	4.0	7.5	4.5	6.5		6.5	4.5
19-20	9.5		8.0		4.0		8.0	7.5			4.0		8.0		6.5		2.5		1.5	5.5	4.0		2.5
20-21				9.0		2.5	2.0				2.5	1.5	6.0	6.0					10.0	9.5	4.5	6.5	
21-22				7.0	3.0		5.0	4.0		2.0		3.0	4.0				10.5	6.0	6.5	3.5	3.5		9.0
22-23		9.5	10.0				8.5	10.0		3.0	7.0	4.5	1.5	4.5		2.0	9.0		4.0	2.0		6.5	7.0
23-24	9.5				2.0		2.5		2.0	4.5	5.5	6.0	10.5		2.5	5.0	7.5	8.5			3.5		5.0
24-25							5.5	7.0	2.5	5.5	4.0	7.5	8.5	3.5	4.5		5.5		9.0			6.5	2.5
25-26				10.5		3.0	9.0		3.0	6.5	2.5	9.0	6.5				4.0		6.5	10.0	3.0		
26-27				8.5	5.0		3.0	3.5	3.5	7.5		10.5	4.5	2.5			2.5	7.0	3.5	9.0		6.5	9.5
27-28	9.0	11.0	8.5				6.0	9.5	4.5	8.5	7.0		2.5	9.5		4.0				8.0	2.5		7.0
28-29					4.0				5.0	10.0	5.5						10.5	9.5	9.0	7.0		6.5	5.0
29-30							3.5	6.5	5.5	11.0	4.0	2.5	9.0	8.5	3.0		9.0	5.5	6.0	5.5	2.5		3.0
30-31			10.5		3.0		6.5		6.5		2.5	4.0	7.0		5.0		7.5		3.5	4.5		6.5	

	AR	DL	DY	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	AV	RV
	HER	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	10.6	11.0	10.2	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	9.9	10.1
MIN	11.6	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	10.9	11.2
RISE	2	1	1	2	2	3	2	2	2	2	3	1	2	2	2	3
0- 1	9.0		3.5		4.0			4.0			4.0	1.5	7.5			1.5
1- 2	7.5	5.0			5.0			1.5				3.5	10.5		7.5	
2- 3	6.0	9.5	9.0						5.0			5.5				9.5
3- 4	5.0		6.5							4.5			3.5			8.0
4- 5	3.5	4.0	3.5	3.0				5.5	2.5				6.5	2.5		6.5
5- 6	2.0	8.5						3.0				3.0	10.0	3.0		5.0
6- 7			9.0								4.5	5.0		4.0	9.5	3.5
7- 8	10.5	3.0	6.5				4.0		5.5	1.5				4.5		2.0
8- 9	9.0	7.5	4.0				3.5	7.0					6.0	5.0	8.0	
9-10	7.5				1.5		3.0	5.0	2.5	2.0	5.0	2.5	9.0	5.5		10.0
10-11	6.0		9.5		3.0		2.5	2.5				4.5		6.0	7.0	8.5
11-12	4.5	6.5	7.0	2.5	4.0		2.0			2.5		6.5		6.5		7.0
12-13	3.0	11.0	4.5	4.5	5.0	2.0			5.5		5.5		5.0	7.0		5.5
13-14	1.5		1.5					6.5		3.0		2.0	8.0	7.5		4.0
14-15		5.5	10.0					4.5	3.0			4.0		8.0		2.5
15-16	10.0	10.0	7.0			2.0		2.0		3.0	5.5	6.0		8.5	9.0	
16-17	8.5		4.5										4.0	9.0		10.5
17-18	7.0	4.5	2.0						6.0	3.5		1.5	7.5	9.5	7.5	9.0
18-19	5.5	9.0	10.0	2.5		2.5		6.0				3.5	10.5	10.5		7.5
19-20	4.5		7.5	4.0				4.0	3.0	4.0		5.5		11.0	6.5	6.0
20-21	3.0	3.5	5.0		1.5			1.5			1.5		3.5			4.5
21-22	1.5	8.0	2.5		3.0	3.0				4.5			6.5			3.0
22-23			10.5		4.0				6.0			3.0	10.0			1.5
23-24	10.0	2.5	8.0		5.0			5.5		5.0	1.5	5.0				
24-25	8.5	6.5	5.0			3.5		3.0	3.5				2.5		8.5	9.5
25-26	7.0	11.0	2.5	2.0						5.5			6.0			8.0
26-27	5.5			3.5							2.0	2.5	9.0		7.0	6.5
27-28	4.0	5.5	8.0			4.0		7.0	6.5	6.0		4.5		3.0		5.0
28-29	2.5	10.0	5.5					5.0				6.5		3.5		3.5
29-30			3.0				4.0	2.5	3.5	6.5	2.5		5.0	4.0		2.0
30-31	11.0	4.5				4.0	3.5					2.0	8.5	4.5		

	SW	XX	AT	SW	TZ	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	TW	VX
	AND	AND	AND	AQR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER	HER
MAX	9.3	10.3	10.8	10.5	11.2	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	10.5	9.9
MIN	10.8	11.6	11.5	12.1	12.8	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	11.8	10.4
RISE	2	3	3	1	2	2	3	2	2	3	2	1	2	2	3	2	3	2	2	3	2	2	2
0- 1	8.5			9.5			3.0	7.0			5.5	5.0	7.5		2.5		5.5	8.0		3.5	2.0		9.5
1- 2			7.0	7.5	2.0	4.0	9.0	7.5		7.0	7.0	3.0					4.0	4.0	8.5	2.5		6.5	7.5
2- 3				6.0		7.0		8.5	2.5	5.5	9.0		6.0				2.5		5.5				5.0
3- 4	10.5						6.0	9.0	4.0	4.0	10.5	10.0						6.5	3.0			6.5	3.0
4- 5	8.0	10.0	9.0			4.0		9.5	5.0	2.5		8.0	5.0	3.5			10.5			10.5			
5- 6				11.0		7.5	2.5	10.0	6.0			5.5					9.0	9.0	8.0	9.0		6.0	9.5
6- 7			5.5	9.0		8.5			7.0	7.0	2.0	3.5	4.0				7.5	5.0	5.5	8.0		6.0	7.5
7- 8	10.0	7.0		7.0		4.5			8.0	5.5	3.5				10.5		5.5	5.0	2.5	7.0		6.0	5.5
8- 9	7.5			5.0	3.0	8.0	5.5		9.5	4.0	5.5	10.5	3.0				4.0	7.5	10.5	6.0			3.5
9-10			7.5			2.0				2.5	7.0	8.5			3.0		2.5	3.5	8.0	4.5		6.0	
10-11					2.0	5.0	2.0				8.5	6.5		4.0				9.5	5.0	3.5			10.0
11-12	9.5			10.0		8.5	8.0	2.0		7.0	10.0	4.5					10.5	6.0	2.5	2.5		6.0	8.0
12-13	7.0	8.5	9.5	8.5		2.5		2.5		5.5		2.0			10.0		9.0		10.0				5.5
13-14				6.5		5.5	5.0	3.0	2.0	4.0			8.0				7.5	8.5	7.5			6.0	3.5
14-15			6.0			8.5	10.5	4.0	3.5	2.5	2.0	9.0					5.5	4.5	4.5	10.5			
15-16	9.0					3.0		4.5	4.5		3.5	7.0	6.5	2.0			4.0		2.0	9.5		6.0	10.0
16-17						6.0	7.5	5.0	5.5	7.0	5.0	5.0		4.5			2.5	7.0	10.0	8.5			8.0
17-18		10.0	8.0	9.5	3.5			5.5	6.5	5.5	6.5	3.0	5.5		9.5				7.0	7.0		6.0	6.0
18-19				7.5		3.5	4.5	6.5	7.5	4.0	8.0						10.5	9.0	4.5	6.0			3.5
19-20	8.5			5.5	2.5	6.5	10.0	7.0	9.0	2.5	9.5	9.5	4.5				9.0	5.5		5.0		6.0	
20-21		7.5	10.0					7.5	10.0			7.5					7.0		9.5	4.0			10.5
21-22						3.5	7.0	8.5		7.0		5.5	3.0	2.5			5.5	7.5	7.0	2.5		6.0	8.0
22-23			6.5	11.0		7.0		9.0		5.5		3.5		5.0	2.0		4.0	4.0	4.0				6.0
23-24	8.0			9.0			4.0	9.5		4.0	3.0		2.0				2.5					6.0	4.0
24-25				7.0		4.0	9.5	10.5		2.5	4.5	10.5						6.5	9.0	10.5			2.0
25-26		9.0	8.5	5.0		7.5			3.0		6.0	8.0					10.5		6.5	9.5	2.5	6.0	10.5
26-27	10.5					6.5		4.0	7.5	7.5	6.0	8.0					9.0	8.5	3.5	8.5			8.5
27-28	8.0		5.0			4.5		5.0	6.0	9.0	4.0			3.0			7.0	5.0		7.5	2.5	5.5	6.5
28-29			10.5	10.0	2.5	8.0	3.5		6.0	4.5	10.5	2.0	7.0		11.0		5.5		9.0	6.0			4.0
29-30				8.0		2.0	9.0		7.0	3.0		11.0					4.0	7.0	6.0	5.0	2.0	5.5	2.0

	AR	DL	DY	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	AV	RV
	HER	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	10.6	11.0	10.2	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	9.9	10.1
MIN	11.6	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	10.9	11.2
RISE	2	1	1	2	2	3	2	2	2	2	3	1	2	2	2	3
0- 1	9.5	9.0	8.5									4.0		5.0	9.0	10.0
1- 2	8.0		6.0		3.0						3.0			5.5		8.5
2- 3	6.5	3.5	3.5				2.0	4.5					4.5	6.0	8.0	7.0
3- 4	5.5	8.0						2.0	4.0				7.5	6.5		5.5
4- 5	4.0		9.0								3.0	3.5	10.5	7.0	6.5	4.0
5- 6	2.5	2.5	6.0											7.5		2.5
6- 7		7.0	3.5										3.5	8.0	5.5	
7- 8	11.0							4.0			3.5		6.5	9.0		10.5
8- 9	9.5		9.0						4.0			3.0	10.0	9.5		9.0
9-10	8.0	6.0	6.5											10.0	8.5	7.5
10-11	6.5	10.5	4.0								4.0		2.5	10.5		6.0
11-12	5.0				1.5								6.0	11.0	7.5	4.5
12-13	3.5	5.0	9.5		3.0			3.5				2.5	9.0			3.0
13-14	2.0	9.5	7.0						4.5			4.5			6.0	
14-15			4.0										2.0			
15-16	10.5	4.0								2.0			5.0		5.0	9.5
16-17	9.0	8.5	9.5	2.5				5.0				2.0	8.5		9.0	8.0
17-18	7.5		7.0					2.5		2.5		4.0		2.0		6.5
18-19	6.0	3.0	4.5						4.5					2.5	8.0	5.0
19-20	5.0	7.5	2.0							3.0			4.5	3.0		3.5
20-21	3.5		10.0										7.5	3.5	7.0	2.0
21-22	2.0	2.0	7.5					4.5		3.5		3.5	11.0	4.0		
22-23		6.5	5.0		2.0			2.0						4.5	5.5	10.0
23-24	10.5	11.0	2.0	2.0	3.0				5.0	4.0			3.5	5.0		8.5
24-25	9.0		10.5				2.0						7.0	5.5	4.5	7.0
25-26	7.5	5.5	8.0						2.0	4.5		3.0	10.0	6.0	8.5	5.5
26-27	6.0	10.0	5.0					4.0						7.0		4.0
27-28	4.5		2.5			2.0				4.5			3.0	7.5	7.5	2.5
28-29	3.0	4.5	10.5						5.0				6.0	8.0		
29-30		9.0	8.0									2.5	9.0	8.5	6.5	10.5

AAVSO RR Lyrae Ephemeris for July 2021

all times in U.T.

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	SW	XX	AT	SW	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	RR	XZ	DM	RW	XZ	TW	VX	AR	DL
	AND	AND	AND	AQR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CET	CYG	CYG	DRA	DRA	HER	HER	HER	HER
MAX	9.3	10.3	10.8	10.5	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	9.3	9.1	11.2	11.0	9.6	10.5	9.9	10.6	11.0
MIN	10.8	11.6	11.5	12.1	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	10.3	10.5	12.7	12.0	10.3	11.8	10.4	11.6	12.4
RISE	2	3	3	1	2	2	3	2	2	3	2	1	2	2	2	3	2	2	3	2	2	2	1
0- 1	10.0	10.5	7.0	6.0		5.0		2.0				9.0	6.0			2.5	3.5	3.5	4.0				
1- 2	7.5			4.0		8.5	6.0	2.5		7.5	2.5	7.0					9.5		3.0	5.5	8.5	10.0	3.5
2- 3	4.5		3.5		10.5	2.5		3.0		6.0	4.0	4.5	4.5		8.0	10.5	5.5	8.5			6.5	8.5	8.0
3- 4		7.5	9.0			5.5	3.0	4.0		4.5	5.5	2.5		10.5	9.0	2.0	6.0			5.5	4.5	7.0	
4- 5	9.5			9.5			8.5	4.5		3.0	7.0		3.5			7.0	8.0	3.0	11.0		2.0	5.5	2.5
5- 6	7.0		5.5	7.5		3.0		5.0			9.0					5.5	4.5		9.5	5.5		4.5	7.0
6- 7		5.0	11.0	5.5		6.0	5.5	6.0	2.5	7.5		7.5	2.5			4.0		8.0	8.5		9.0	3.0	
7- 8				3.5	10.5			6.5	3.5	6.0		5.5			7.5	2.5	6.5	5.5	7.5	5.5	6.5		
8- 9	9.0	9.0	7.5			3.5	2.0	7.0	4.5	4.5		3.5		10.0		3.0	3.0	6.5			4.5		6.0
9-10	6.5			10.5		6.5	8.0	7.5	5.5	3.0	2.0					10.5	9.0		5.0	5.5	2.5	10.0	
10-11			4.0	8.5				8.5	6.5		4.0					9.0	5.0	8.0	4.0				8.5
11-12		6.5	9.5	7.0		3.5	5.0		8.0	7.5	5.5	8.0				7.0		5.0	3.0	5.5	9.0	7.0	5.0
12-13	8.5			5.0		7.0				6.0	7.0	6.0				5.5	7.5	2.5	2.0		7.0	5.5	9.5
13-14	6.0	10.5	6.0		9.0					4.5	8.5	4.0	6.0		9.5	4.0	3.5	10.5		5.5	5.0	4.0	
14-15						4.0	7.5			3.0		2.0		2.0		2.5	10.0	7.5	11.0		2.5	2.5	4.0
15-16				10.0		7.5							5.0				6.0	5.0	10.0	5.5			8.5
16-17	8.0	8.0	8.0	8.0			4.5			7.5		8.5				10.5	2.5	2.0	8.5		9.5		
17-18	5.5			6.0		4.5			2.0	6.0	2.0	6.5	4.0			8.5	8.5	10.0	7.5	5.0	7.0	9.5	3.0
18-19			4.5	4.0	9.5	8.0			3.0	4.5	3.5	4.5			8.5	7.0	4.5	7.5	6.5		5.0	8.0	7.5
19-20	10.5	5.5	10.0			2.0	7.0	2.0	4.0	3.0	5.0	2.5	3.0			5.5		4.5	5.5	5.0	3.0	6.5	
20-21	7.5					5.0		2.5	5.0		6.5			2.5		4.0	7.0	2.0	4.0			5.0	2.0
21-22	5.0	9.5	6.5	9.5		8.0	4.0	3.0	6.0	7.5	8.0					2.5	3.0	9.5	3.0	5.0		4.0	6.5
22-23				7.5		2.5		4.0	7.5	6.0		7.5					9.5	7.0	2.0		7.5	2.5	
23-24	10.0			5.5	10.0	5.5		4.5		4.5		5.0			8.0	10.5	5.5	4.0		5.0	5.0		
24-25	7.0	6.5	8.5	3.5			6.5	5.0		3.0		3.0		10.5	8.5	1.5					3.0	11.0	5.5
25-26						3.0		6.0								7.0	8.0	9.5	10.0	5.0		9.5	9.5
26-27		11.0	5.0	10.5		6.0	3.5	6.5		7.5	3.0		6.5			5.5	4.0	6.5	9.0			8.0	
27-28	9.5		10.5	8.5			9.0	7.0		6.0	4.5	8.0				4.0		4.0	8.0	5.0	7.5	6.5	4.5
28-29	7.0			6.5	10.5	3.0		8.0		4.5	6.0	6.0	5.5		7.5	2.5	6.5		6.5		5.5	5.0	8.5
29-30		8.0	7.0	4.5		6.5	6.0		2.5	3.0	7.5	4.0		10.0			2.5	9.0	5.5	5.0	3.5	3.5	
30-31									3.5				4.5			10.5	9.0	6.5	4.5			2.0	3.5

	DY	RR	SS	TV	SZ	RR	RZ	AV	RV
	HER	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	10.2	10.0	10.5	11.5	9.1	7.1	10.0	9.9	10.1
MIN	10.6	11.7	12.0	12.6	9.6	8.1	12.0	10.9	11.2
RISE	1	2	2	2	1	2	2	2	3
0- 1	5.5		2.0				9.0		9.0
1- 2	3.0	3.5				2.0	9.5	5.0	7.5
2- 3						5.0	10.0	9.0	6.0
3- 4	8.5				1.5	8.5	10.5	4.0	4.5
4- 5	6.0						11.0	8.0	3.0
5- 6	3.0		2.5					3.0	
6- 7		2.5				4.5		7.0	
7- 8	8.5					7.5			
8- 9	6.0					11.0		6.0	8.0
9-10	3.5								6.5
10-11			2.5			3.5	2.0	4.5	5.0
11-12	9.0	2.0				7.0	2.5	8.5	3.5
12-13	6.5				2.5	10.0	3.0	3.5	2.0
13-14	4.0						3.5	7.5	
14-15						3.0	4.0		
15-16			3.0			6.0	4.5	6.5	8.5
16-17	6.5				2.0	9.5	5.5		7.0
17-18	4.0						6.0	5.5	5.5
18-19						2.0	6.5	9.5	4.0
19-20						5.5	7.0	4.0	2.5
20-21	7.0	3.5	3.0	2.0		8.5	7.5	8.0	
21-22	4.5						8.0	3.0	
22-23	2.0			2.0			8.5	7.0	9.0
23-24						4.5	9.0		7.5
24-25	7.5			2.5		7.5	9.5	6.0	6.0
25-26	4.5	2.5	3.5			11.0	10.0		4.5
26-27	2.0						10.5	4.5	3.0
27-28						4.0		9.0	
28-29	7.5					7.0		3.5	
29-30	5.0				2.5	10.0		7.5	
30-31	2.5	2.0						2.5	8.0

	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RR	XZ	DM	RW	XZ	RR	TW	VX	AR
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CET	CYG	CYG	DRA	DRA	GEM	HER	HER	HER
MAX	9.3	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	9.3	9.1	11.2	11.0	9.6	10.7	10.5	9.9	10.6
MIN	10.8	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	10.3	10.5	12.7	12.0	10.3	11.9	11.8	10.4	11.6
RISE	2	3	3	1	2	2	2	3	2	2	3	2	1	2	2	3	2	2	3	2	2	2	2
0- 1	9.0		3.5				3.5	3.0		4.5						8.5	5.0	3.5	3.5		5.0		
1- 2	6.5	5.5	9.0	10.0						5.5	6.0			3.0		7.0			2.0				
2- 3	3.5			8.0	8.5	10.5					4.5		6.5		7.0	5.5	7.5	8.5			5.0	5.5	
3- 4		9.5	5.5	6.0		8.5	4.0	5.5			3.0	2.5	4.5	2.0	9.5	4.0	3.5	6.0	11.5			3.5	7.5
4- 5	8.5	3.0	11.0	4.0							1.5	4.0	2.5			2.5	10.0	3.0	10.0		5.0	1.5	6.0
5- 6	6.0		1.5	2.0			1.5	2.5									6.0		9.0				5.0
6- 7	3.0	7.0	7.5				4.5		1.5		6.0					10.5	2.0	8.5	8.0		5.0		3.5
7- 8				9.0					2.0		4.5		7.0		6.5	8.5	8.5	5.5	7.0			6.0	2.0
8- 9	8.0	11.0	4.0	7.0		9.0	2.0	5.0	2.5		3.0		5.0		9.0	7.0	4.5	3.0	5.5		4.5	3.5	
9-10	5.5	4.5	9.5	5.0			5.0		3.5	2.0	1.5		3.0			5.5			4.5			1.5	
10-11	2.5			3.5				2.0	4.0	3.0						4.0	7.0	8.0	3.5		4.5		9.0
11-12	10.5	8.5	6.0	1.5	9.0		2.5		4.5	4.0	6.0	2.0				2.5	3.0	5.5	2.5	9.5	9.5		7.5
12-13	7.5		11.5	10.5			5.5		5.0	5.0	4.5	4.0			6.0		9.5	2.5			4.5	6.0	6.0
13-14	5.0		2.0	8.5		9.5		4.5	6.0		3.0	5.5	5.5		8.5	10.5	5.5	10.5			9.5	4.0	4.5
14-15		6.0	8.0	6.5		7.5	3.0				1.5	7.0	3.5	3.5	11.0	8.5	1.5	7.5	10.5		4.5	2.0	3.0
15-16	10.0			4.5			6.0	1.5					1.5			7.0	8.0	5.0	9.0		9.5		1.5
16-17	7.0	10.0	4.5	2.5				7.0			6.0			2.5		5.5	4.0	2.0	8.0		4.5		
17-18	4.5	3.0	10.0				3.0				4.5				5.5	4.0		10.0	7.0		9.5	6.5	
18-19				9.5		10.0	6.5	4.0			3.0		6.5	1.5	8.0	2.0	6.5	7.5	6.0		4.5	4.0	8.5
19-20	9.5	7.0	6.5	7.5		7.5					1.5	2.0	4.0		10.5		2.5	4.5	4.5		9.0	2.0	7.0
20-21	6.5			6.0	9.0		3.5			1.5		3.5	2.0			10.0	8.5	2.0	3.5		4.5		5.5
21-22	4.0	11.0	2.5	4.0				6.5		2.5	6.0	5.0				8.5	5.0	10.0	2.5		9.0		4.5
22-23		4.5	8.5	2.0						3.5	4.5	6.5				7.0		7.0	1.5		4.5	6.5	3.0
23-24	9.0			11.0		10.0	4.0	3.5		4.5	3.0		7.0		7.5	5.5	7.5	4.5			9.0	4.5	1.5
24-25	6.0	8.5	4.5	9.0		8.0				6.0	1.5		5.0		10.0	4.0	3.5	1.5	10.5		4.5	2.0	
25-26	3.5		10.5	7.0			1.5		1.5				3.0			2.0	9.5	9.5	9.5		9.0		
26-27				5.0			4.5	6.0	2.0		6.0						6.0	6.5	8.5		4.5		8.5
27-28	8.5	6.0	7.0	3.0					2.5		4.5	1.5		4.0		10.0	2.0	4.0	7.0		9.0	6.5	7.0
28-29	6.0					10.5	2.0	3.0	3.5		3.0	3.0				7.0	8.5	8.0		6.0	4.0	4.5	5.5
29-30	3.0	10.0	3.0	10.5	9.5	8.5	5.0		4.0		1.5	4.5	5.5	3.0	9.5	7.0	4.5	9.0	5.0		9.0	2.5	4.0
30-31		3.5	9.0	8.5					4.5			6.0	3.5			5.5		6.5	3.5		4.0		2.5

AAVSO RR Lyrae Ephemeris for August 2021

all times in U.T.

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	DL	DY	SS	RR	RZ	AV	RV
	HER	HER	LEO	LYR	LYR	PEG	UMA
MAX	11.0	10.2	10.5	7.1	10.0	9.9	10.1
MIN	12.4	10.6	12.0	8.1	12.0	10.9	11.2
RISE	1	1	2	2	2	2	3
0- 1	7.5			3.0		6.5	6.5
1- 2				6.0	1.5	1.5	5.0
2- 3	2.5	5.5		9.5	2.0	5.5	3.5
3- 4	6.5	3.0			2.5		2.0
4- 5				2.0	3.0	4.0	
5- 6				5.5	4.0	8.5	
6- 7	5.5	5.5		8.5	4.5	3.0	
7- 8		3.0			5.0	7.0	7.0
8- 9				1.5	5.5	2.0	5.5
9-10	4.5			4.5	6.0	6.0	4.0
10-11		6.0		8.0	6.5		2.5
11-12		3.5	1.5	11.0	7.0	5.0	
12-13	3.5				7.5	9.0	
13-14				4.0	8.0	3.5	
14-15		6.5		7.0	8.5	8.0	
15-16	2.5	3.5		10.0	9.0	2.5	6.0
16-17	7.0				9.5	6.5	4.5
17-18				3.0	10.5	1.5	3.0
18-19	1.5	6.5		6.5		5.5	1.5
19-20	6.0	4.0		9.5			
20-21		1.5				4.5	
21-22				2.5		8.5	
22-23	5.0	7.0		5.5		3.0	6.5
23-24		4.5		8.5		7.5	5.0
24-25		1.5			2.0	2.0	3.5
25-26	4.0			1.5	2.5	6.0	2.0
26-27				4.5	3.0		
27-28		4.5		8.0	3.5	5.0	
28-29	3.0	2.0		11.0	4.0	9.0	
29-30	7.5				4.5	4.0	7.0
30-31				4.0	5.0	8.0	5.5

AAVSO RR Lyrae Ephemeris for September 2021

all times in U.T.

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	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	TW
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER
MAX	9.3	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	10.5
MIN	10.8	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	11.8
RISE	2	3	3	1	2	2	2	3	2	2	3	2	1	2	2	3	2	3	2	2	3	2	2
0- 1	8.0			6.5	8.5		2.5			1.0			1.5	1.5				4.0	6.5	3.5	2.5		
1- 2	5.5	7.5	5.0	4.5						2.0	4.5						4.0	2.0	3.0	1.0	1.5		4.0
2- 3	2.5	1.0	11.0	2.5	7.5			2.5		3.0	3.0			0.5	10.5		6.5	0.5	9.0	9.0			
3- 4	10.5	11.5	1.5			9.0	2.5				1.5						9.0	10.0	5.0	6.0	10.5		4.0
4- 5	7.5	5.0	7.0			7.0						1.0	4.0			11.0	11.5	8.5	1.5	3.5	9.5		
5- 6	5.0			7.5				5.0				2.5	2.0					7.0	7.5	0.5	8.5		4.0
6- 7	2.0	9.0	3.5	5.5			3.0				4.5	4.0					3.5	5.5	4.0	8.5	7.5		
7- 8	10.0	2.0	9.5	3.5				2.0			3.0						6.0	4.0	10.0	5.5	6.0		4.0
8- 9	7.0			1.5		9.5					1.5				11.0	9.5	8.5	2.0	6.0	3.0	5.0		
9-10	4.5	6.0	5.5		8.5	7.0	3.5						4.5				11.0	0.5	2.5		4.0	9.5	4.0
10-11	1.5		11.5	9.0		5.0		4.5					2.5					10.0	8.5	8.0	3.0		
11-12	9.5	10.5	2.0	7.0	7.5		1.0				4.5		0.5					8.5	4.5	5.5	1.5	9.0	4.0
12-13	6.5	3.5	7.5	5.0			4.0	1.5	0.5	1.5	3.0	0.5					5.5	7.0	1.0	2.5	0.5		
13-14	4.0			3.0	6.5	9.5			1.5	2.5	1.5	2.0		2.0		11.5	8.0	5.5	7.0		11.0	8.5	4.0
14-15	1.0	7.5	4.0	1.0		7.5	1.5		2.0	3.5		4.0			11.0		10.5	3.5	3.0	8.0	9.5		
15-16	9.0	1.0	9.5			5.5		4.0	2.5				3.0	1.0				2.0	9.5	5.0	8.5	8.5	4.0
16-17	6.0	11.5	0.5	8.0					3.5		4.5		1.0					0.5	5.5	2.5	7.5		
17-18	3.5	5.0	6.0	6.0			2.0	1.0	4.0		3.0					10.0	4.5	10.0	2.0		6.5	8.0	3.5
18-19	0.5		12.0	4.5	8.5	10.0					1.5						7.5	8.5	8.0	7.5	5.0		
19-20	8.5	9.0	2.5	2.5		8.0								9.5		10.0	7.0	4.0	4.5	4.0	7.5	3.5	
20-21	5.5	2.5	8.0		7.5	6.0	2.5	3.5					4.0		11.5			5.5		2.0	3.0		
21-22	3.0											2.0	2.0					3.5	6.5		2.0	7.5	3.5
22-23		6.5	4.5	7.5	6.5						3.0	3.5				11.5	4.0	2.0	2.5	7.0	0.5		
23-24	8.0		10.0	5.5		10.5	2.5			1.0	1.5	5.0					6.5	0.5	9.0	4.5	11.0		3.5
24-25	5.0	10.5	1.0	3.5		8.5					2.0						9.5	10.0	5.0	1.5	10.0		
25-26	2.5	4.0	6.5	1.5		6.5		3.0		3.0			4.5		10.0		12.0	8.5	1.0		8.5		3.5
26-27	10.5						3.0						2.5	2.5		10.5		7.0	7.5	7.0	7.5		
27-28	7.5	8.0	3.0	8.5	9.0						3.0						3.5	5.5	3.5	4.0	6.5		3.5
28-29	5.0	1.0	8.5	7.0		11.0					1.5			1.5			6.0	3.5	10.0	1.5	5.5		
29-30	2.0	12.0		5.0	8.0	9.0	3.5					1.5					8.5	2.0	6.0		4.0		3.5

	VX	AR	DL	DY	SZ	UU	DG	DH	RR	WW	SZ	RR	RZ	AV	RV
	HER	HER	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	9.9	10.6	11.0	10.2	10.6	10.7	11.6	11.4	10.0	11.0	9.1	7.1	10.0	9.9	10.1
MIN	10.4	11.6	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	9.6	8.1	12.0	10.9	11.2
RISE	2	2	1	1	2	2	3	2	2	3	1	2	2	2	3
0- 1		1.0	2.0	5.0								7.0	5.5	2.5	4.0
1- 2				2.5			11.0						6.0	7.0	2.5
2- 3	5.0												6.5	1.5	1.0
3- 4	2.5		1.0					11.5				3.0	7.0	5.5	
4- 5		6.5	5.5		11.0	11.5				8.5	6.5	7.5			
5- 6		5.0		2.5								9.5	8.0	4.5	
6- 7		4.0												8.5	
7- 8	5.0	2.5	4.5			12.0		11.0				2.5		3.5	4.5
8- 9	3.0	1.0								8.0	5.5			7.5	3.0
9-10	0.5			3.0								9.0		2.0	1.5
10-11			3.5											6.5	
11-12												1.5		1.0	
12-13	5.0	6.5									7.5	5.0		5.0	
13-14	3.0	5.0	2.5	3.5								8.0		9.5	
14-15	1.0	3.5		0.5									1.0	4.0	5.0
15-16		2.0				11.0						1.0	1.5	8.0	3.5
16-17		0.5	1.5									4.0	2.0	3.0	2.0
17-18			6.0	3.5								7.0	2.5	7.0	
18-19	3.5			1.0									3.0	1.5	
19-20	1.0												3.5	6.0	
20-21		6.0	5.0									3.0	4.0	0.5	
21-22		4.5		4.0							8.5	6.5	4.5	4.5	
22-23		3.5		1.5						11.0		9.5	5.0	9.0	4.0
23-24	3.5	2.0	4.0		12.0								5.5	3.5	2.5
24-25	1.5											2.5	6.0	7.5	1.0
25-26				4.0			11.5		11.0	11.0	8.0	5.5	7.0	2.5	
26-27			3.0	1.5	11.0		11.0	11.0				9.0	7.5	6.5	
27-28													8.0	1.0	
28-29	3.5	6.0								11.5		1.5	8.5	5.5	
29-30	1.5	4.5	2.0	4.5							7.5	5.0			4.5

	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	TW
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER
MAX	9.3	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	10.5
MIN	10.8	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	11.8
RISE	2	3	3	1	2	2	2	3	2	2	3	2	1	2	2	3	2	3	2	2	3	2	2
0- 1	10.0	5.5	5.0	3.0		6.5		2.5	0.0			3.0		0.0	8.0	9.0	11.5	0.5	2.0	6.5	3.0		
1- 2	7.0		10.5	1.0	7.0	4.5	1.0		1.0				3.0		10.5	12.0			8.5	4.0	2.0	6.0	3.5
2- 3	4.5	9.5	1.5						1.5				1.0				3.0	8.5	4.5	1.0	1.0		
3- 4	1.5	2.5	7.0		6.0				2.0		1.5						5.5	7.0	0.5		11.0	5.5	3.5
4- 5	9.5			6.0		9.0	1.5			0.5	0.0					7.5	8.0	5.5	7.0	6.0	10.0		
5- 6	6.5	6.5	3.5	4.0	5.0	7.0		2.0		1.5						10.5	10.5	3.5	3.0	3.5	9.0		3.5
6- 7	4.0	0.0	9.0	2.0	9.0	5.0						12.5			8.5			2.0		0.5	8.0		
7- 8	1.0	10.5		0.0			2.0					1.0	1.5		11.0		2.5	0.5	5.5		6.5		3.5
8- 9	9.0	4.0	5.5		8.0						1.5	2.5					5.0		1.5	6.0	5.5	9.5	
9-10	6.0		11.0			9.5					0.0						9.5	7.5	8.5	8.0	3.0	4.5	3.0
10-11	3.5	8.0	2.0	5.5	7.0	7.5	2.0	1.5									12.5	10.0	7.0	4.0	0.5	3.5	9.0
11-12	0.5	1.5	7.5	3.5		5.5												5.0	0.0		2.0		3.0
12-13	8.5	12.0		1.5	6.0	3.5							2.5		9.0		2.0	3.5	6.5	5.5	1.0	8.5	
13-14	5.5	5.5	4.0								2.0		0.0	0.5	11.5	8.0	4.5	2.0	2.5	3.0	11.5		3.0
14-15	3.0		9.5		5.0	10.0					0.5						11.0	7.0	0.5	9.0	0.0	10.0	8.5
15-16	0.0	9.5	0.5	6.5	9.5	8.0		1.0		0.0		0.5					9.5		5.0		9.0		3.0
16-17	8.0	3.0	6.0	4.5		6.0				1.0		2.0							8.5	1.0	5.0	8.0	8.0
17-18	5.0		11.5	2.5	8.5	3.5							3.0				1.5	7.0	7.5	2.5	7.0		3.0
18-19	2.5	7.0	2.5	1.0			0.5				2.0		1.0		9.5	9.5	4.0	5.0	3.5		5.5	8.0	
19-20	10.0	0.5	8.0		7.5	10.5			0.0		0.5				11.5		6.5	3.5			4.5		3.0
20-21	7.5	11.0				8.5		0.5	1.0								9.0	2.0	6.0	5.0	3.5	7.5	
21-22	4.5	4.5	4.5	6.0	6.5	6.0	1.0		1.5									0.5	2.0	2.0	2.5		3.0
22-23	2.0		10.0	4.0		4.0			2.0									8.5		8.0		1.0	7.0
23-24	10.0	8.5	1.0	2.0	5.5			3.0			2.0	0.5	1.5		7.5	11.5	3.5	8.5	4.5		0.0		3.0
24-25	7.0	1.5	6.5	0.0		11.0	1.5				0.5	2.0			10.0		6.0	7.0	0.5	4.5	10.5	7.0	
25-26	4.0	12.5	12.0			9.0									12.0		8.5	5.0	7.0	2.0	9.0		3.0
26-27	1.5	5.5	3.0	7.0	8.5	6.5											11.0	3.5	3.0		8.0	6.5	
27-28	9.5		8.5	5.0		4.5	2.0			0.5							10.0	2.0		7.0	7.0		3.0
28-29	6.5	10.0		3.5	7.5			2.5		1.5	2.0		2.0				3.0	0.5	5.5	4.0	6.0	6.0	
29-30	4.0	3.0	5.0	1.5							0.5		0.0		8.0		5.5		1.5	1.5	4.5		2.5
30-31	1.0		10.5		6.5	9.0	2.0								10.5		8.0	8.5	7.5		3.5	6.0	

	VX	AR	DL	DY	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	AV	RV
	HER	HER	HER	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	9.9	10.6	11.0	10.2	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	9.9	10.1
MIN	10.4	11.6	12.4	10.6	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	10.9	11.2
RISE	2	2	1	1	2	2	3	2	2	2	2	3	1	2	2	2	3
0- 1		3.0		2.0	11.5											4.0	3.0
1- 2		1.5						10.5			12.0					8.0	1.5
2- 3		0.0	1.0				9.0							1.0		3.0	11.0
3- 4													7.0	4.0		7.0	9.5
4- 5	2.0			2.5							12.0			7.5		2.0	
5- 6							9.5									6.0	
6- 7						10.0		9.5						0.0	0.5	0.5	
7- 8		4.0			11.0	11.0				11.5			6.0	3.5	1.0	5.0	
8- 9		3.0		2.5		12.5	10.0						8.5	6.5	1.5	9.0	2.0
9-10	2.0	1.5	3.0							11.5					2.0	3.5	0.5
10-11															2.5	7.5	10.0
11-12							10.5	9.0		12.0			5.5	2.5	3.0	2.5	
12-13			2.0	3.0									7.5	5.5	3.5	6.5	
13-14				0.5											4.0	1.5	
14-15	2.0				10.5		11.0								4.5	5.5	
15-16	0.0	4.0	1.0					11.0					5.0	1.5	5.5	0.0	2.5
16-17		2.5						8.5					7.0	5.0	6.0	4.5	1.0
17-18		1.0		0.5		10.0	11.0								6.5	8.5	10.5
18-19			0.0			11.0		11.5			9.0					3.0	
19-20	2.5					12.5		11.0						1.0		7.0	
20-21	0.5						11.5	10.5	10.5				6.5	4.0		2.0	
21-22				1.0	10.5			9.5			9.5			7.5		6.0	
22-23			3.5		12.0			9.0								1.0	3.0
23-24		4.0					12.0							0.0		5.0	1.5
24-25	2.5	2.5								9.5		6.0	3.5				11.0
25-26	0.5	1.0	2.5	1.0				9.5				8.0	6.5			4.0	9.5
26-27							12.5		11.5							8.0	
27-28											10.0					2.5	
28-29			1.5		10.0	10.0							5.5	2.5	0.0	6.5	
29-30	3.0			1.5	12.0	11.5							7.5	6.0	0.5	1.5	
30-31	0.5					12.5		9.0			10.5				1.0	5.5	2.0

	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	TW
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER
MAX	9.3	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	10.5
MIN	10.8	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	11.8
RISE	2	3	3	1	2	2	2	3	2	2	3	2	1	2	2	3	2	3	2	2	3	2	2
0- 1	9.0	7.0	1.5			7.0						12.5			12.5	8.5		7.0	4.0		2.5		2.5
1- 2	6.0	0.5	7.0		5.5	5.0										11.5		5.0		4.0	1.5	5.5	
2- 3	3.5	11.0		4.5		3.0											2.5	3.5	6.0	1.0	0.0		2.5
3- 4	0.5	4.5	3.5	2.5	4.5						0.5		0.5	12.0	6.5		5.0	2.0	2.5		10.5	5.0	
4- 5	8.5		9.0	0.5	8.5	9.5			10.5						8.5	7.5	7.5	0.5			9.5		2.5
5- 6	5.5	8.5			3.5	7.5			11.0						11.0	10.5			5.0	3.5	8.5	5.0	
6- 7	3.0	2.0	5.5		7.5	5.5			12.0	11.5									1.0	1.0	7.0	9.5	2.5
7- 8	0.0				2.5	3.5	0.5		0.0			11.0					2.0	6.5			6.0	4.5	
8- 9	8.0	6.0	2.0	4.0	6.5	1.0					0.5	12.5				6.0	4.5	5.0	3.5		5.0	9.0	2.5
9-10	5.0		7.5	2.0		10.0									7.0	9.0	7.0	3.5		3.0	3.5	4.0	
10-11	2.5	10.0			5.5	8.0									9.0	12.0	9.5	2.0	5.5	0.5	2.5	9.0	2.5
11-12		3.5	4.0			6.0									11.5			0.5	2.0		1.5	4.0	
12-13	7.5		9.5		4.5	3.5		1.0									1.5				0.5	8.5	2.5
13-14	4.5	7.5	0.5	5.0	9.0	1.5					0.5					7.5	4.0		4.0	3.0	10.5	3.5	
14-15	2.0	0.5	6.0	3.0	3.5	10.5		12.5								11.0	6.5	6.5	0.5	0.0	9.5	8.0	2.5
15-16	9.5			1.0	8.0	8.5							10.5		7.0		9.0	5.0	6.5		8.5		
16-17	7.0	5.0	2.5		2.5	6.0						12.0		12.5	9.5			3.5	2.5		7.5	8.0	2.5
17-18	4.0		8.0		7.0	4.0		0.5		11.0		0.5			12.0	6.5	0.5	2.0		2.5	6.0		
18-19	1.5	9.0				2.0				12.0	0.5			11.0		9.5	3.5	0.5	5.0	10.5	5.0	7.5	2.5
19-20	9.0	2.0	4.5	4.5	6.0	11.0		12.0					0.5			12.5	6.0		1.5		4.0		
20-21	6.5		10.0	2.5		8.5									5.5		8.5			5.0	3.0	7.0	2.0
21-22	3.5	6.0	1.0	0.5	5.0	6.5									7.5			6.5	3.5	2.0	1.5		
22-23	1.0		6.5		9.0	4.5									10.0	8.0	0.0	5.0		10.0	0.5	7.0	2.0
23-24	9.0	10.0			4.0	2.5			10.5		0.5	10.0			12.0	11.0	2.5	3.5	6.0		11.0		
24-25	6.0	3.5	3.0		8.0			11.5	11.5			11.5	1.0				5.5	2.0	2.0	4.5	9.5	6.5	2.0
25-26	3.0		8.5	3.5	3.0	9.0			12.0			0.5					8.0	0.5		2.0	8.5		
26-27	0.5	7.5		1.5	7.0	7.0			0.5						6.0	7.0			4.5	10.0	7.5	6.0	2.0
27-28	8.5	1.0	5.0			5.0	0.5								8.0	10.0			0.5		6.5		
28-29	5.5				6.0	3.0					0.5				10.5	13.0	2.0	6.5		4.5	5.0	6.0	2.0
29-30	3.0	5.0	1.5					11.0		11.5				12.5	12.5		4.5	5.0	3.0	1.5	4.0		

AAVSO RR Lyrae Ephemeris for December 2021

all times in U.T.

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	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	TW	AR	
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER	HER	
MAX	9.3	10.3	10.8	10.5	11.2	11.1	9.8	10.6	11.3	12.0	10.8	11.2	10.6	10.7	11.0	9.3	9.1	11.2	11.0	9.6	10.7	10.5	10.6	
MIN	10.8	11.6	11.5	12.1	12.8	12.6	11.3	11.8	12.7	13.4	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	11.8	11.6	
RISE	2	3	3	1	2	2	2	3	2	2	2	1	2	2	3	2	3	2	2	3	2	2	2	
0- 1			7.0		5.0	9.5					8.0	10.5			5.5	7.5	3.5		9.5	3.0	5.5			
1- 2	8.0	9.0		3.0	9.5	7.5					9.5		11.5	4.0	8.5		2.0			2.0				
2- 3	5.0	2.5	3.5	1.0	4.0	5.5					11.0			6.5	11.5		0.5	1.5		0.5	5.0			
3- 4	2.5				8.5	3.0					12.5		10.5	8.5		1.5			1.5	11.0				
4- 5		6.5			3.0	1.0		10.5						11.0	4.0	4.0		4.0	9.0	10.0	5.0		11.0	
5- 6	7.5		5.5		7.5	10.0							9.5		7.0	6.5		0.0		8.5	9.5		9.5	
6- 7	4.5				2.0	8.0						9.0			10.0		5.0			7.5	4.5			
7- 8	2.0	4.0	1.5	2.5	6.5	5.5								4.5			3.5	2.5	1.0	6.5	9.0			
8- 9			7.5	0.5	1.0	3.5			8.0	9.0				7.0		1.0	2.0		9.0	5.5	4.0			
9-10	7.0	8.0			5.5	1.5		10.0	8.5	10.0	9.0			9.0	6.0	3.5	0.0	5.0		4.0	9.0			
10-11	4.0	1.0	4.0			10.5			9.5	11.0	11.0			11.5	9.0	6.0		1.0		3.0	4.0			
11-12	1.5				4.5	8.0			10.0	12.5	12.5	10.0			12.0					0.5	2.0	8.5		1.0
12-13		5.0	0.0		8.5	6.0		13.0	10.5									3.5	8.5	1.0	3.5			10.5
13-14	6.5		6.0	1.5	3.5	4.0			11.5					5.0	4.5	0.5	5.0			11.0	8.0			9.5
14-15	3.5	9.5			7.5	2.0	9.0	9.5	12.0				12.0	7.5	7.5	3.0	3.5		3.0	10.0	3.0			
15-16	1.0	2.5	2.0		2.5	10.5								9.5	10.5	5.5	2.0	2.0	0.5	9.0	8.0			
16-17			8.0		6.5	8.5						10.5	11.0	12.0			0.0		8.0	8.0	3.0			
17-18	6.0	6.5			1.5	6.5		12.5			9.0							4.5		6.5	7.5			
18-19	3.0		4.5	3.0	5.5	4.5					10.5		9.5		6.0	0.0		0.5	2.5	5.5	2.5			
19-20	0.5			1.0		2.5					12.0			5.5	9.0	2.5			10.5	4.5	7.0			0.5
20-21		4.0	0.5		4.5	0.0				9.5				8.0	12.0	5.0	5.0	3.0	8.0	3.5	2.5			10.5
21-22	5.5		6.5		8.5	9.0				10.5				10.0			3.5			2.0	7.0			9.0
22-23	2.5	8.0			3.5	7.0		12.0		12.0		9.0		12.5	5.0		2.0		2.5	1.0	2.0	1.5		
23-24		1.5	2.5		7.5	5.0								8.0		0.0	1.5	10.5	11.5	6.5				
24-25	8.0			2.0	2.5	2.5								3.5	11.0	2.0				10.0	1.5	1.5		
25-26	5.0	5.5		0.0	6.5	0.5				8.5				6.0		4.5		4.0		9.0	6.0			
26-27	2.0		4.5		1.5	9.5				10.0				8.0		7.0		0.0	2.0	8.0		1.5		
27-28					5.5	7.5		11.5	8.0		11.5	9.5	12.5	10.5	6.5		5.0		10.0	7.0	6.0			0.5
28-29	7.5	3.0	1.0		0.5	5.0				9.0				12.5	9.5		3.5	2.5		5.5		1.5	10.0	
29-30	4.5		7.0		4.5	3.0				9.5			11.0		12.5	1.5	2.0			4.5	5.5			9.0
30-31	2.0	7.0		1.5	9.0	1.0			10.0					4.0		4.0	0.0	5.0	1.5	3.5		1.0		

	DL	SZ	UU	DG	DH	RR	SS	TV	WW	SZ	RR	RZ	AV	RV
	HER	HYA	HYA	HYA	HYA	LEO	LEO	LEO	LEO	LYN	LYR	LYR	PEG	UMA
MAX	11.0	10.6	10.7	11.6	11.4	10.0	10.5	11.5	11.0	9.1	7.1	10.0	9.9	10.1
MIN	12.4	11.7	12.3	12.6	12.6	11.7	12.0	12.6	12.0	9.6	8.1	12.0	10.9	11.2
RISE	1	2	2	3	2	2	2	2	3	1	2	2	2	3
0- 1			10.0	5.0				7.0		3.5			1.5	10.5
1- 2		6.5	11.5		11.5				9.0	5.5	2.5			9.0
2- 3		8.0	12.5	11.5	11.0	10.0	10.0	7.5		7.5			0.5	7.5
3- 4		10.0		5.5	10.5	7.5							4.5	6.0
4- 5		11.5			10.0	5.0	7.5	8.0	9.5	3.0				
5- 6	12.5			12.0	9.5					5.0	2.0		3.5	
6- 7				6.0	9.0			8.5	5.0	7.0				
7- 8			5.5		8.5	9.0	10.5		10.0				2.5	11.0
8- 9		6.0	7.0	12.0	8.0	7.0		9.0		2.5				9.5
9-10		7.5	8.0	6.5	7.5	4.5	7.5		5.0	4.5	1.0		1.0	8.0
10-11		9.5	9.0		7.0			9.5	10.0	6.5				6.5
11-12		11.0	10.0	12.5	6.5					8.5			0.0	
12-13			11.5	6.5	6.0	8.5	10.5	10.0	5.5	1.5			4.0	
13-14			12.5		5.0	6.5			10.5	4.0	0.5	0.5		
14-15							8.0	10.5		6.0	3.5	1.0	3.0	
15-16		5.5		7.0					6.0	8.0		1.5		10.0
16-17		7.5				10.5		10.5	11.0	1.0		2.0	2.0	8.5
17-18		9.0				8.0	11.0			3.0		2.5		7.0
18-19	13.0	11.0	5.5	7.5		6.0		11.0	6.0	5.5	3.0		0.5	5.5
19-20		12.5	7.0				8.0		11.0	7.5			5.0	
20-21			8.0					11.5						
21-22			9.0	8.0		10.0			6.5	2.5			3.5	
22-23			10.5			7.5	11.0	12.0	11.5	4.5	2.0			10.5
23-24		7.0	11.5		11.5	5.0				7.0			2.5	9.0
24-25		8.5	12.5	8.5	11.0		8.5	12.5	7.0					7.5
25-26		10.5			10.5				12.0	2.0			1.5	6.0
26-27		12.5			10.0	9.0		13.0		4.0	1.0			
27-28				9.0	9.5	7.0	11.5		7.5	6.0			0.0	
28-29					9.0	4.5			12.0	8.5			4.5	
29-30			5.5		8.5		8.5			1.5				11.0
30-31		6.5	7.0	9.0	8.0				7.5	3.5	0.5		3.0	9.5