

The 2023 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.

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.

Gerard Samolyk, AAVSO Short Period Pulsator Section

REFERENCE

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

AAVSO RR Lyrae Ephemeris for January 2023

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

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

	SW	XX	AT	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	VX	AR	
	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	9.9	10.6	
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	10.4	11.6	
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		2.0		3.5	7.0			9.5		4.0	5.0	5.5		10.5	8.0				9.0	1.5	7.5		11.0	
1- 2	2.5			7.5	5.0	7.5	5.5	10.5			6.5		10.0		11.0		0.0		6.5	0.0	2.5		9.5	
2- 3			1.0	2.5	3.0		11.5	11.0	6.0		8.0			2.0	0.5		9.5		3.5	10.5	7.5	9.5	8.0	
3- 4				6.5	1.0	5.0		11.5	7.0	7.0	9.5	10.5	9.0	4.5	3.5	0.5	8.0			9.5	2.5	7.5	6.5	
4- 5				1.5		8.0	8.0	12.5	8.0	5.5	11.0	8.5		6.5	6.5	3.0			8.5	8.0	7.0		5.0	
5- 6	2.0	3.5	3.0	5.5	7.5				9.0	4.0	12.5	6.0	8.0	9.0	9.5			0.0	6.0	7.0	2.0			
6- 7				0.5	5.5	5.5			10.0					11.0							6.0	6.5		
7- 8				4.5	3.5	8.5	11.0		11.5				6.5	0.0	2.0		1.5				5.0	2.0	9.5	
8- 9		0.5		8.5	1.0				12.5	7.0	4.5	11.0		2.5	5.0		11.0		8.5	3.5	6.5	7.5	10.5	
9-10	1.5			3.5		6.0	7.5			5.5	6.0	9.0	5.5	4.5	8.0	2.5	9.5		5.5	2.5	1.5		9.0	
10-11		5.0	1.5	7.5	8.0					4.0	7.5	7.0	13.0	7.0			8.0			1.5	6.0		7.5	
11-12				2.5	6.0			4.5			9.5			9.5	0.5						0.5	1.0		6.0
12-13			13.0	6.5	4.0	6.5	10.5	5.0			11.0			11.5	11.5	4.0			8.0	10.5	5.5	10.0	5.0	
13-14	1.0	2.0	3.5	1.5	1.5			6.0	5.5	7.0	12.5			0.5	7.0				5.5	9.5	1.0	8.0		
14-15				5.5			7.0	6.5	6.5	5.5		9.5	10.5	3.0	10.0	2.0	1.5				8.5	5.5		
15-16			0.0	0.5	8.5	7.0		7.0	7.5	4.0		7.5		5.0			11.0		10.5	7.5	0.5			
16-17	3.5			4.5	6.5			8.0	8.5		4.0	5.5	9.5	7.5	2.5		9.5		7.5	6.0	5.0		10.5	
17-18	0.5			9.0	4.0		10.0	8.5	9.5		6.0			9.5	5.5		8.0		5.0	5.0	0.0	10.0	9.0	
18-19		3.5	2.0	3.5	2.0	7.5		9.0	11.0	7.0	7.5		8.5	12.0	8.5			0.5		4.0	4.5	8.0	7.5	
19-20				8.0			6.5	9.5	12.0	5.5	9.0	10.0		1.0		1.0			10.0	3.0	9.5		6.0	
20-21	3.0			2.5	9.0		12.5	10.5		4.0	10.5	8.0	7.0	3.5	1.0				7.5	1.5	4.5			
21-22	0.0	1.0	4.0	7.0	6.5	7.5		11.0			12.0	6.0		5.5	4.0		1.5		4.5	0.5	9.0			
22-23				1.5	4.5		9.5	11.5					6.0	8.0	7.0		11.0			11.0	4.0	10.5		
23-24		5.0	0.5	6.0	2.5	5.0				7.0				10.0	10.0		9.5		10.0	9.5	8.5	8.0		
24-25	2.5			0.5	0.5	8.0	6.0		5.0	5.5		11.0		12.5		0.5	8.0		7.0	8.5	3.5		10.0	
25-26				5.0			12.0		6.0	4.0	5.5	8.5	12.0	1.5	3.0	3.0			4.5	7.5	8.5		8.5	
26-27		2.5	2.5	9.0	7.0	5.5		7.0		7.0	6.5			4.0	6.0		0.0			6.5	3.5		7.0	
27-28				4.0	5.0	8.5	9.0		8.0		8.5		11.0	6.0	9.0				9.5	5.0	8.0	10.5	5.5	

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

AAVSO RR Lyrae Ephemeris for March 2023

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

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

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

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

AAVSO RR Lyrae Ephemeris for May 2023

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

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

AAVSO RR Lyrae Ephemeris for July 2023

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

AAVSO RR Lyrae Ephemeris for August 2023

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

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

AAVSO RR Lyrae Ephemeris for September 2023

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

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

AAVSO RR Lyrae Ephemeris for October 2023

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	SW	XX	AT	SW	TZ	BH	RS	ST	SW	SZ	TV	TW	UU	RW	TT	RR	XZ	DM	RW	XZ	RR	TW	VX	
	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	10.8	11.2	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	12.6	11.3	11.8	12.7	13.4	11.5	12.1	12.7	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	2	3	2	2	3	2	1	2	3	2	3	2	2	3	2	2	2	
0- 1	3.5	5.0	0.5		4.5		1.5	1.5			2.5					11.5	5.5	5.5	5.0	3.0	6.5	0.5		
1- 2	0.5		6.0		9.0	9.5					1.0			9.5			4.0	1.5	2.5	1.5		5.0		
2- 3	8.5	9.0	12.0	6.0		7.5						12.5		12.0		3.0	2.5	8.0		0.5	6.0	0.0		
3- 4	5.5	2.5	2.5	4.0	8.0	5.5	2.0					1.0			10.0	6.0	0.5	4.0		11.0		5.0	2.5	
4- 5	3.0		8.0	2.0		3.0						2.5	1.5			8.5		0.5	5.0	9.5	5.5	0.0	0.5	
5- 6	0.0	6.5		0.0	7.0			1.0			2.5					11.0	8.5	6.5	2.0	8.5		5.0		
6- 7	8.0		4.5			10.0	2.5				1.0			8.0			7.0	2.5		7.5		0.0		
7- 8	5.0	10.5	10.5	7.0	6.0	8.0				0.5				10.0	9.0	2.5	5.5	9.0		6.5		5.0		
8- 9	2.5	3.5	1.0	5.5		5.5			12.0	1.5				12.5	12.0	5.0	4.0	5.0	4.5	5.0		0.0	2.5	
9-10	10.0		6.5	3.5	5.0	3.5			0.5				2.0			8.0	2.5	1.0	2.0	4.0		5.0	0.5	
10-11	7.5	7.5		1.5	9.0			0.5	1.0		2.5	12.0	0.0			10.5	0.5	7.5		3.0		0.0		
11-12	4.5	1.0	3.0			10.5	0.0		2.0		1.0	1.0				7.5		3.5	7.0	2.0	9.5	5.0		
12-13	2.0	12.0	8.5		8.0	8.0						2.5		8.5	10.5	2.0	8.5		4.0	0.5				
13-14	9.5	5.0		6.5		6.0		3.0						10.5		4.5	7.0	6.0	1.5	11.0	9.0	5.0	3.0	
14-15	7.0		5.0	4.5	7.0	4.0	0.5						3.0			7.0	5.5	2.0		10.0		0.5		
15-16	4.0	9.0	10.5	2.5							2.5		1.0			10.0	4.0	8.5	6.5	8.5	8.5	4.5		
16-17	1.5	2.5	1.5	0.5	6.0	10.5					1.0					9.5	2.0	4.5	4.0	7.5				
17-18	9.0		7.0			8.5	1.0									12.5	1.5	0.5	0.5	1.0	6.5	8.5	4.5	
18-19	6.5	6.5			5.0	6.5		2.5						8.5		4.0		7.0		5.5			3.0	
19-20	3.5		3.5	6.0	9.5	4.5				1.0		0.5		11.0		6.5	8.5	3.0	6.5	4.0	8.0	4.5	1.0	
20-21	1.0	10.5	9.0	4.0			1.5			2.0	2.5	2.0	1.5			8.0	9.0	7.0		3.5	3.0			
21-22	9.0	4.0		2.0	8.5						1.0					11.0		5.5	5.5	1.0	2.0	7.5	4.5	
22-23	6.0		5.5			9.0											4.0	1.5		1.0				
23-24	3.0	8.0	11.0		7.5	7.0	2.0	2.0								3.5	2.0	8.0	6.0	11.0	7.5	4.5	3.5	
24-25	0.5	1.5	2.0	7.0		5.0								9.0		6.0	0.5	4.0	3.0	10.0			1.0	
25-26	8.5	12.0	7.5	5.0	6.5						2.5		2.0	11.5	9.5	8.5		0.0	0.5	9.0	7.0	4.5		
26-27	5.5	5.5		3.0			2.5				1.0		0.0			11.0	8.5	6.5		7.5				
27-28	2.5		4.0	1.0	5.5	9.5			12.5			0.0					7.0	2.5	5.5	6.5	6.5	4.5		
28-29	10.5	9.5	9.5			7.5		1.5	0.5			1.5				3.0	5.5	8.5	3.0	5.5				
29-30	8.0	2.5	0.5			5.0			1.0							8.5	5.5	4.0	5.0	0.0	4.5	6.5	4.5	1.5
30-31	5.0		6.0	6.5	8.5	3.0			2.0	0.5	2.5		2.5	9.5	11.5	8.0	2.0	1.0		3.0				

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

AAVSO RR Lyrae Ephemeris for November 2023

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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	VX	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	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	12.1	12.7	12.0	12.6	12.3	10.3	10.5	12.7	12.0	10.3	11.9	10.4	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	2.5	7.0		4.5	3.5		0.0					0.5	11.0	12.0			0.5			2.0	6.0		1.0
1- 2		0.0	2.5	2.5	7.5	10.0												3.5	2.5	1.0			11.0
2- 3	7.5	11.0	8.0	0.5		7.5		1.0							7.0	2.5			10.5	11.5	5.5		
3- 4	4.5	4.0			6.5	5.5					11.0			5.5	10.0	5.0	7.0	6.0		10.0			
4- 5	2.0		4.5			3.5		12.5			12.5			8.0		7.5	5.5	2.0	5.0	9.0	5.5		
5- 6	9.5	8.0	10.0		5.5	1.5								10.0			4.0		2.0	8.0			
6- 7	7.0	1.5	1.0	3.5		10.0								12.5	5.5		2.0	4.5	10.0	7.0	5.0		
7- 8	4.0		6.5	2.0	4.5	8.0		0.5							8.5	2.0	0.5	0.5		5.5			2.5
8- 9	1.5	5.5			8.5	6.0									11.5	4.5		6.5	4.5	4.5	4.5		1.0
9-10	9.0		3.0		3.5	4.0		12.0		11.5				6.0		7.0		3.0	2.0	3.5	9.5		
10-11	6.5	9.5	8.5		7.5	2.0				12.5				8.5			7.0		10.0	2.5	4.5		
11-12	3.5	3.0		5.0	2.5	10.5					10.5		12.5	10.5	7.5		5.5	5.5		1.0	9.0		
12-13	1.0		5.0	3.0	6.5	8.5			10.5		12.0			13.0	10.5	1.5	3.5	1.5	4.5	0.0	4.0		
13-14	8.5	7.0		1.0		6.5				11.0	1.0		11.5			4.0	2.0		1.5	10.5	8.5		
14-15	6.0	0.5	1.5		5.5	4.5		11.5	11.5							6.5	0.5	4.0		9.0	3.5		
15-16	3.0	11.0	7.0			2.0				12.5				6.5	6.0	9.0				8.0	8.5		2.0
16-17	0.5	4.5			4.5							0.5		9.0	9.0			6.0	4.0	7.0	3.5		0.5
17-18	8.0		3.5	4.5	9.0	9.0								11.0	12.0	1.0	7.0	2.5	1.5	6.0	8.0		
18-19	5.5	8.5	9.0	2.5	3.5	7.0										3.5	5.5			4.5			
19-20	2.5	2.0		0.5	8.0	4.5		11.0			10.0					6.0	3.5	4.5		3.5	7.5	0.0	
20-21			5.5		2.5	2.5	0.0			11.0	11.5				7.5	8.5	2.0	1.0	3.5	2.5			
21-22	8.0	6.0			7.0					12.0	0.5	1.0		7.0	10.5		0.5		1.0	1.5	7.5		
22-23	5.0		2.0			9.5								9.0		0.5		3.0		0.0			
23-24	2.0	10.0	7.5	3.5	6.0	7.0								11.5		3.0				10.5	7.0		2.0
24-25		3.0		1.5		5.0							13.0		6.5	5.5	7.0	5.5	3.5	9.5		0.5	0.5
25-26	7.5		4.0		5.0	3.0									9.5	8.0	5.5	2.0	0.5	8.0	6.5		
26-27	4.5	7.0	9.5		9.0							11.5			12.5		3.5			7.0			
27-28	1.5	0.5	0.5		4.0	10.0								7.5			2.0	4.0		6.0	6.5		
28-29	9.5	11.5	6.0	5.0	8.0	7.5				11.5				9.5		2.5	0.5	0.5	3.0	5.0			
29-30	7.0	4.5		3.0	3.0	5.5					0.0			12.0	8.0	5.0		6.5	0.5	3.5	6.0	0.5	

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

AAVSO RR Lyrae Ephemeris for December 2023

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	SW	XX	AT	SW	TZ	BH	ST	SW	SZ	TW	UU	UY	RW	TT	RR	XZ	DM	RW	XZ	RR	AR	DL	SZ
	AND	AND	AND	AQR	AUR	AUR	BOO	BOO	BOO	BOO	BOO	BOO	CNC	CNC	CET	CYG	CYG	DRA	DRA	GEM	HER	HER	HYA
MAX	9.3	10.3	10.8	10.5	11.2	11.1	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	10.6	11.0	10.6
MIN	10.8	11.6	11.5	12.1	12.8	12.6	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	11.6	12.4	11.7
RISE	2	3	3	1	2	2	3	2	2	2	1	2	2	3	2	3	2	2	3	2	2	1	2
0- 1	4.0		2.5	1.0	7.0	3.5		9.5	9.5			9.5		11.0	7.5		2.5	8.0	2.5				6.5
1- 2	1.5	8.5	8.0		2.0	1.5		10.5	10.5										1.5	5.5			8.5
2- 3		2.0			6.0	10.0	13.0	11.0	11.5				5.5	3.5		5.5		2.5	0.5		0.0		10.5
3- 4	6.5		4.5		1.0	8.0		11.5			9.0		8.0	6.5	1.5	3.5	1.0	10.5	10.5	5.5	10.0		12.0
4- 5	3.5	6.0			5.0	6.0	9.5						10.0	10.0	4.5	2.0		8.0	9.5				
5- 6	1.0		1.0	2.0	9.5	4.0				9.5			12.5	13.0	7.0	0.5	3.5		8.5	5.0			
6- 7			6.5	0.0	4.0	1.5				11.0								2.5	7.0				
7- 8	6.0	3.5			8.5	10.5	12.5			12.5			4.0	5.5				10.0	6.0	5.0			6.5
8- 9	3.0		3.0		3.0	8.5					10.0		6.0	8.5	1.0		2.0		5.0	9.5			8.0
9-10	0.5	7.5			7.5	6.5						12.0	8.5	11.5	3.5	5.0			4.0	4.5			10.0
10-11		1.0			2.0	4.0							10.5		6.5	3.5	4.5	2.0	2.5	9.0	11.0		11.5
11-12	5.5		5.0	1.5	6.5	2.0						11.0	13.0	4.0		2.0	0.5	10.0	1.5	4.0	9.5	12.5	
12-13	2.5	5.0			1.0	0.0	12.0		10.0					7.0		0.5			0.5	8.5			
13-14			1.5		5.5	9.0			11.0	9.0	10.5	10.0	4.5	10.0	0.5		3.0		11.0	4.0			
14-15	7.5	9.0	7.0			7.0			12.0	10.5			6.5		3.0			1.5	9.5	8.5			6.0
15-16	5.0	2.0			4.5	4.5				12.0			9.0		5.5			9.5	8.5	3.5			7.5
16-17	2.0		3.5	3.0	8.5	2.5							11.0	5.5		5.0	1.5		7.5	8.0			9.5
17-18		6.5		1.0	3.5	0.5	11.5	8.5						9.0		3.5			6.5	3.0			11.5
18-19	7.0				7.5	9.5		9.0						12.0	0.0	2.0	4.0	1.5	5.0	7.5	11.0		
19-20	4.5		5.5		2.5	7.0		10.0			9.0		5.0		2.5	0.5	0.0	9.5	4.0	3.0	9.5		
20-21	1.5	3.5			6.5	5.0		10.5					7.0	4.5	5.0				3.0	7.5			
21-22			2.0		1.5	3.0		11.0		8.5			9.5	7.5			2.5		1.5	2.5			5.5
22-23	7.0	7.5	7.5	2.0	5.5	1.0	10.5	11.5		10.0		12.5	11.5	10.5				1.0	0.5	7.0			7.5
23-24	4.0	1.0		0.0		9.5			9.5	11.5						5.0	5.0	9.0	11.0	2.0			9.0
24-25	1.0		4.0		4.5	7.5			10.5		9.5	11.5			2.0	3.5	1.0		10.0	7.0		12.5	11.0
25-26		5.0			8.5	5.5			11.5				5.0	6.0	4.5	2.0			8.5	2.0	1.0		12.5
26-27	6.5		0.0		3.5	3.5					10.0	7.5	9.0	7.0	0.5	3.5	0.5	7.5	6.5	10.5			
27-28	3.5	9.0	6.0		7.5	1.5	10.0						10.0	12.0				8.5	6.5	1.5	9.0		
28-29	0.5	2.5		1.5	2.5	10.0						9.0	12.0						5.5	6.0			
29-30			2.5		6.5	8.0				8.0	10.5			5.0	1.5		2.0	3.0	4.0				7.0
30-31	6.0	6.5	8.0		1.5	6.0	13.0			9.5				8.0	4.0	5.0		0.5	3.0	6.0			8.5

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