

# Epsilon Aurigae 1955-57 Eclipse Data

Data Reseached and Provided by Brian Skiff  
June 2008

Here are Gunnar Larsson-Leander's photoelectric observations of the epsilon Aurigae event in 1955-57 and later. The lightcurve covers from roughly second contact to well past the end of the partial egress phase, and then in the second short paper for a couple years afterwards.

His V magnitudes are very close to standard V, and I show a transformation to get his P-V colors to B-V. (Of course simply subtract P-V from P to get V for the AAVSO files.)

He finds eta Aur to be somewhat variable, unsurprisingly. Probably it should be avoided as a comp star.

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## Source: 1959ArA.....2..283L

LARSSON-LEANDER G.

Arkiv for Astron., 2, 283-294 (1959)

Photoelectric observations of the 1955-1957 eclipse of epsilon Aurigae.

1962ArA.....3...17L [data from JD 2436457.433 onward]

LARSSON-LEANDER G.

Arkiv for Astron., 3, 17-20 (1962)

Photoelectric observations of epsilon Aurigae out of eclipse.

--- 60cm Stockholm photographic refractor + EMI 5060 photomultiplier tube,  
filters: P = Corning 5030 + Schott GG13, V = Corning 3384

--- comp stars mostly HR 1644 (for which he determines  $V = 6.206$ ,  $P-V = 0.308$ )  
and lambda Aur ( $V = 4.692$ ,  $P-V = 0.486$ ), plus a few with  
eta Aur ( $V = 3.160$ ,  $P-V = 0.366$ ), but finds eta Aur to be  
somewhat variable (full range  $\sim 0.07$  mag)

--- night-to-night rms of HR 1644 minus lambda Aur: 0.018 mag (in P),  
and series mean-error-of-the-mean = 0.001 (n=98),  
so the pair are constant

To convert P-V to B-V:  $P-V = -0.171 + 1.098(B-V)$   
 [cf 1962ArA.....3...51L]

JD	P	P-V	JD	P	P-V
2435427.619	4.160	0.432	2435759.351	4.334	0.502
2435439.506	4.231	0.469	2435759.362	4.310	0.492
2435439.527	4.236	0.459	2435760.396	4.313	0.491
2435440.487	4.237	0.464	2435761.434	4.324	0.479
2435440.508	4.267	0.473	2435766.361	4.305	0.458
2435451.409	4.222	0.452	2435779.341	4.314	0.477
2435452.429	4.210	0.429	2435784.299	4.291:	0.467
2435453.594	4.179	0.453	2435794.447	4.320	0.468
2435496.451	4.242:	0.430:	2435798.464	4.320	0.481
2435507.538	4.156	0.444	2435813.338	4.262	0.464
2435509.337	4.162	0.416	2435817.168	4.241	0.469
2435509.355	4.162	0.430	2435821.177	4.219	0.430
2435525.326	4.122	0.434	2435825.282	4.189	0.456
2435530.358	4.087	0.431	2435826.329	4.184	0.464
2435530.420	4.106	0.422	2435827.444	4.175	0.471
2435536.370	4.086	0.407	2435849.461	4.014	0.468
2435550.449	4.123	0.417	2435852.436	4.002	0.471
2435552.300	4.151	0.421	2435854.307	3.987	0.474
2435552.314	4.142	0.434	2435858.295	3.945	0.462
2435553.270	4.160	0.442	2435867.371	3.881	0.458
2435554.327	4.170	0.441	2435873.328	3.842	0.467
2435582.383	4.291	0.466	2435877.403	3.843	0.469
2435584.443	4.316	0.469	2435903.381	3.714	0.492
2435587.372	4.267	0.436	2435903.388	3.710	0.478
2435600.426	4.124:	0.496	2435907.390	3.696	0.483
2435600.437	4.125:	0.491	2435914.283	3.676	0.486
2435603.409	4.141	0.453	2435916.397	3.639	0.461
2435605.414	4.134	0.453	2435917.352	3.635	0.473
2435610.449	4.104	0.453	2435921.335	3.617	0.450
2435619.439	4.065	0.460	2435922.372	3.611	0.458
2435622.431	4.116:	0.429:	2435923.279	3.621	0.454
2435668.475	4.166	0.474	2435928.293	3.584	0.459
2435669.485	4.155	0.479	2435929.287	3.577	0.450
2435670.464	4.102	0.434	2435930.293	3.587	0.471
2435672.464	4.182	0.459	2435931.295	3.583	0.447
2435674.470	4.154	0.452	2435932.341	3.569	0.462
2435677.462	4.154	0.453	2435943.322	3.520	0.450
2435682.508	4.139	0.430	2435944.440	3.575	0.467
2435690.459	4.142	0.428	2435946.350	3.510	0.459
2435692.520	4.137	0.435	2435977.394	3.400	0.424
2435693.514	4.151	0.446	2435978.402	3.453	0.411
2435695.508	4.162	0.452	2435979.409	3.533	0.473
2435696.529	4.184	0.466	2436053.483	3.432	0.431
2435718.494	4.238	0.464	2436072.547	3.413	0.424
2435719.533	4.260	0.475	2436091.278	3.479	0.431
2435726.486	4.255	0.467	2436136.598	3.362	0.417
2435729.544	4.286	0.486	2436145.411	3.330	0.396
2435730.433	4.273	0.487	2436154.382	3.350	0.404
2435733.495	4.291	0.487	2436158.460	3.347	0.409
2435743.403	4.328	0.503	2436178.368	3.449	0.438
2435748.412	4.343	0.504	2436187.296	3.496	0.454
2435748.420	4.325:	0.487	2436254.442	3.446	0.418
2435751.457	4.330	0.490	2436262.366	3.486	0.438
2435755.538	4.317	0.485	2436268.414	3.513	0.459
2435756.401	4.300	0.492	2436285.356	3.469	0.455

JD	P	P-V	JD	P	P-V
2436286.371	3.483	0.458	2436596.348	3.416	0.425
2436287.368	3.468	0.449	2436600.361	3.422	0.430
2436290.386	3.475	0.467	2436606.313	3.437	0.447
2436291.374	3.426	0.459	2436629.345	3.470	0.446
2436293.338	3.466	0.450	2436637.399	3.478	0.449
2436302.317	3.450	0.446	2436639.439	3.485	0.456
2436304.344	3.429	0.446	2436640.429	3.479	0.446
2436310.414	3.425	0.448	2436641.379	3.491	0.450
2436319.380	3.424	0.449	2436649.316	3.485	0.466
2436329.433	3.381	0.407	2436650.282	3.481	0.452
2436334.408	3.377	0.434	2436652.443	3.457	0.429
2436457.433	3.383	0.416	2436655.405	3.458	0.437
2436458.469	3.415	0.431	2436661.313	3.458	0.456
2436459.419	3.412	0.432	2436675.381	3.425	0.432
2436460.456	3.393	0.415	2436684.551	3.470	0.444
2436466.400	3.443	0.440	2436950.409	3.453	0.437
2436474.376	3.458	0.464	2437003.303	3.414	0.437
2436518.475	3.475	0.429	2436023.450	3.440	0.440
2436584.361	3.394	0.405			

### Adjusted Data

uvby Photometric System

Mean value from:

Hauck B. & Mermilliod M. 1998, Astron. Astrophys. Suppl. 129, 431

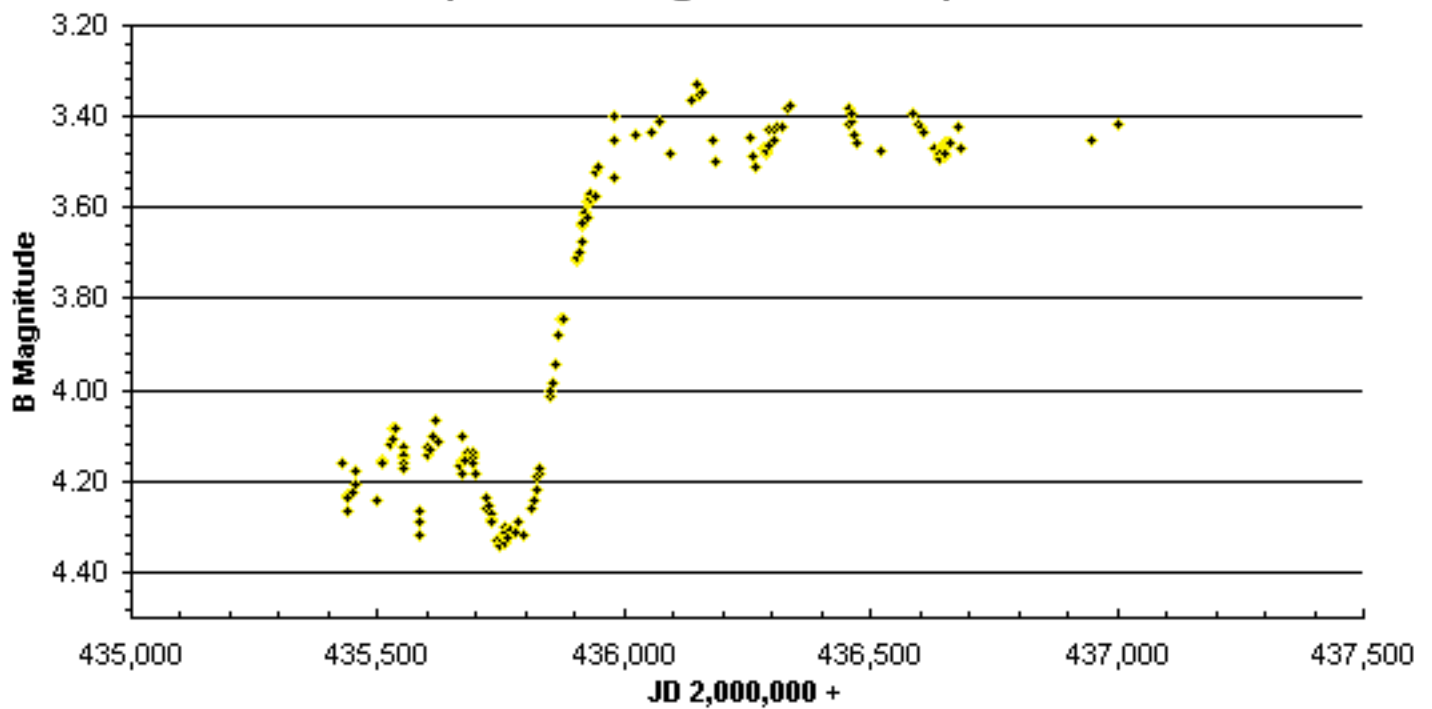
V	b-y	m1	c1	N	beta	Nb
4.694	0.390	0.204	0.364	25	2.600	13
0.006	0.002	0.003	0.004			

JD	B	V	JD	B	V
2,000,000 +			2,000,000 +		
435427	4.160	3.728	435600	4.125	3.634
435439	4.231	3.762	435603	4.141	3.688
435439	4.236	3.777	435605	4.134	3.681
435440	4.237	3.773	435610	4.104	3.651
435440	4.267	3.794	435619	4.065	3.605
435451	4.222	3.77	435622	4.116	3.687
435452	4.210	3.781	435668	4.166	3.692
435453	4.179	3.726	435669	4.155	3.676
435496	4.242	3.812	435670	4.102	3.668
435507	4.156	3.712	435672	4.182	3.723
435509	4.162	3.746	435674	4.154	3.702
435509	4.162	3.732	435677	4.154	3.701
435525	4.122	3.688	435682	4.139	3.709
435530	4.087	3.656	435690	4.142	3.714
435530	4.106	3.684	435692	4.137	3.702
435536	4.086	3.679	435693	4.151	3.705
435550	4.123	3.706	435695	4.162	3.71
435552	4.151	3.73	435696	4.184	3.718
435552	4.142	3.708	435718	4.238	3.774
435553	4.160	3.718	435719	4.260	3.785
435554	4.170	3.729	435726	4.255	3.788
435582	4.291	3.825	435729	4.286	3.8
435584	4.316	3.847	435730	4.273	3.786
435587	4.267	3.831	435733	4.291	3.804
435600	4.124	3.628	435743	4.328	3.825

JD 2,000,000 +	B	V	JD 2,000,000 +	B	V
435748	4.343	3.839	436091	3.479	3.048
435748	4.325	3.838	436136	3.362	2.945
435751	4.330	3.84	436145	3.330	2.934
435755	4.317	3.832	436154	3.350	2.946
435756	4.300	3.808	436158	3.347	2.938
435759	4.334	3.832	436178	3.449	3.011
435759	4.310	3.818	436187	3.496	3.042
435760	4.313	3.822	436254	3.446	3.028
435761	4.324	3.845	436262	3.486	3.048
435766	4.305	3.847	436268	3.513	3.054
435779	4.314	3.837	436285	3.469	3.014
435784	4.291	3.824	436286	3.483	3.025
435794	4.320	3.852	436287	3.468	3.019
435798	4.320	3.839	436290	3.475	3.008
435813	4.262	3.798	436291	3.426	2.967
435817	4.241	3.772	436293	3.466	3.016
435821	4.219	3.789	436302	3.450	3.004
435825	4.189	3.733	436304	3.429	2.983
435826	4.184	3.72	436310	3.425	2.977
435827	4.175	3.704	436319	3.424	2.975
435849	4.014	3.546	436329	3.381	2.974
435852	4.002	3.531	436334	3.377	2.943
435854	3.987	3.513	436457	3.383	2.967
435858	3.945	3.483	436458	3.415	2.984
435867	3.881	3.423	436459	3.412	2.98
435873	3.842	3.375	436460	3.393	2.978
435877	3.843	3.374	436466	3.443	3.003
435903	3.714	3.222	436474	3.458	2.994
435903	3.710	3.232	436518	3.475	3.046
435907	3.696	3.213	436584	3.394	2.989
435914	3.676	3.19	436596	3.416	2.991
435916	3.639	3.178	436600	3.422	2.992
435917	3.635	3.162	436606	3.437	2.99
435921	3.617	3.167	436629	3.470	3.024
435922	3.611	3.153	436637	3.478	3.029
435923	3.621	3.167	436639	3.485	3.029
435928	3.584	3.125	436640	3.479	3.033
435929	3.577	3.127	436641	3.491	3.041
435930	3.587	3.116	436649	3.485	3.019
435931	3.583	3.136	436650	3.481	3.029
435932	3.569	3.107	436652	3.457	3.028
435943	3.520	3.07	436655	3.458	3.021
435944	3.575	3.108	436661	3.458	3.002
435946	3.510	3.051	436675	3.425	2.993
435977	3.400	2.976	436684	3.470	3.026
435978	3.453	3.042	436950	3.453	3.016
435979	3.533	3.06	437003	3.414	2.977
436053	3.432	3.001	436023	3.440	3
436072	3.413	2.989			

# Epsilon Aurigae 1955-57 Eclipse Plots (HPO)

## Epsilon Aurigae 1955 Eclipse



## Epsilon Aurigae 1955 Eclipse

