



120 Years of RZ Dor

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Abstract

Archival data on RZ Dor is examined to update its type and period. Data ranging from pre-1900 Harvard plates through AAVSO visual estimates made during the 1980s and 1990s to 21st century CCD photometry is used to confirm its type as Mira and determine an accurate period. The value of multiple, independent (yet accessible) datasets is confirmed yet again.

RZ Dor

- Discovered by Gerasimovič (1927) while blinking AX-series Harvard plates
- Caught my eye in the course of other research: listed in the General Catalog of Variable Stars (Samus, N. N. et al. 2004) with an uncertain type, and the period and range was that given by Gerasimovič in 1927.

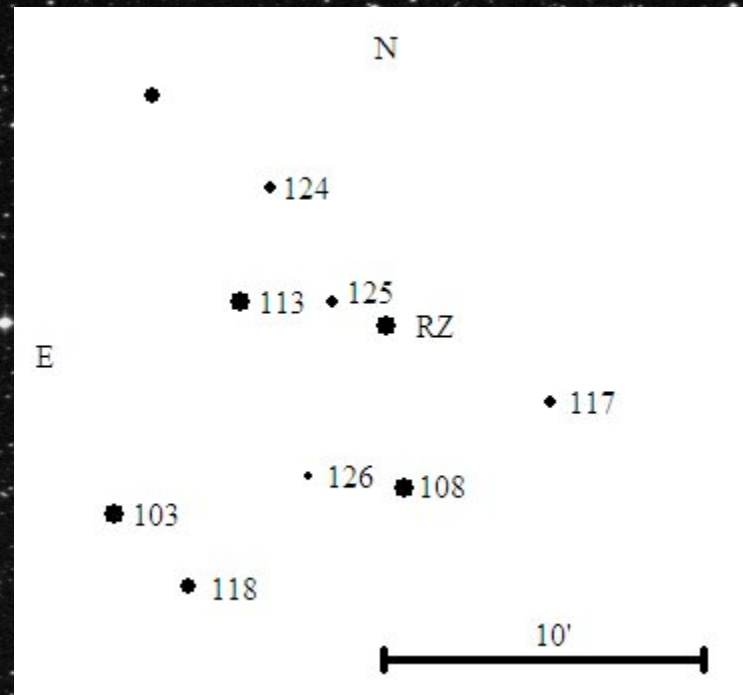
RZ Dor

- November, 2006 at HCO Plate Stacks
- Located RZ Dor on 74 plates of the A, AM, MF and RB series plates dating from 1898 to 1951
- Created a photographic sequence and estimated RZ's magnitude on each plate

RZ Dor



RZ Dor Sequence

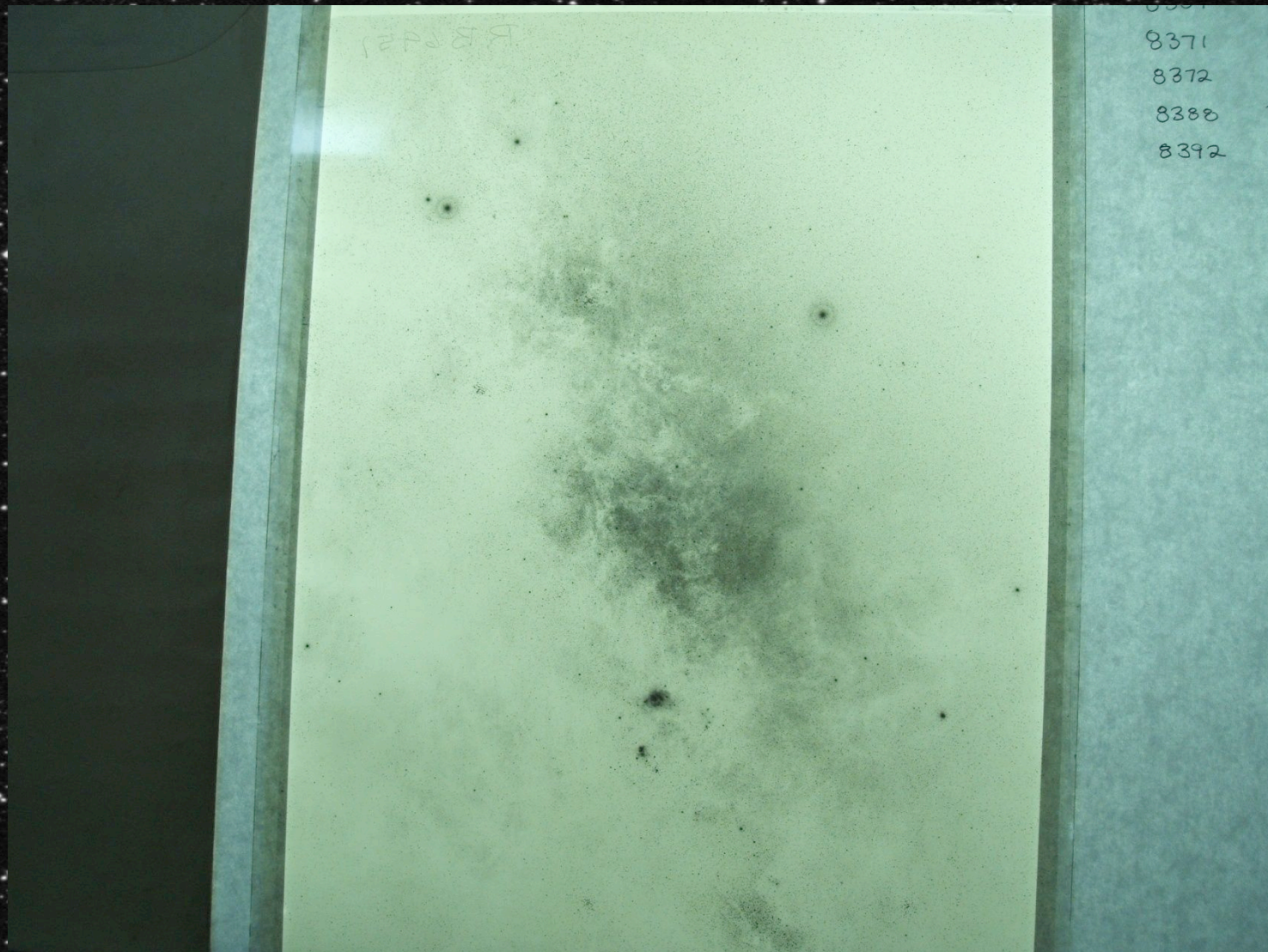


Sequence created from Tycho magnitudes converted to B (Henden 2006a)

RZ Dor



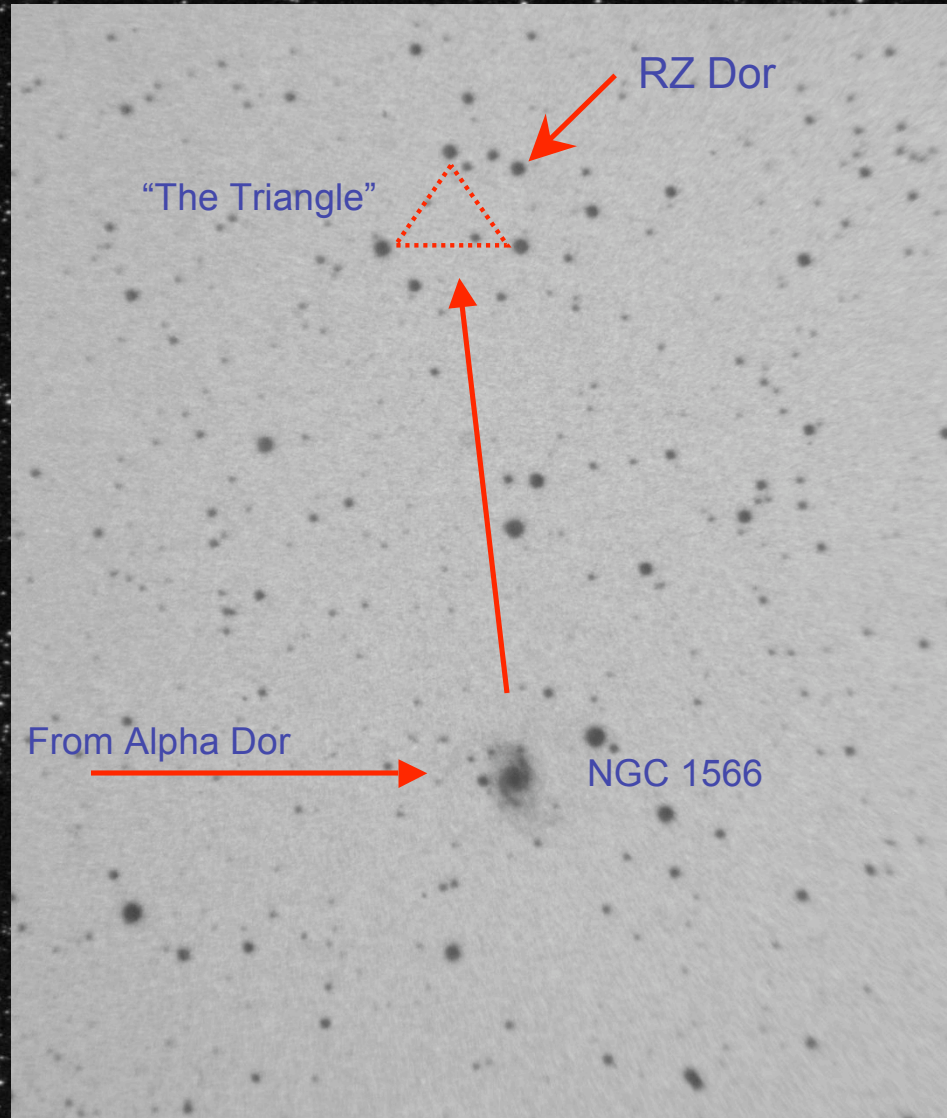
RZ Dor



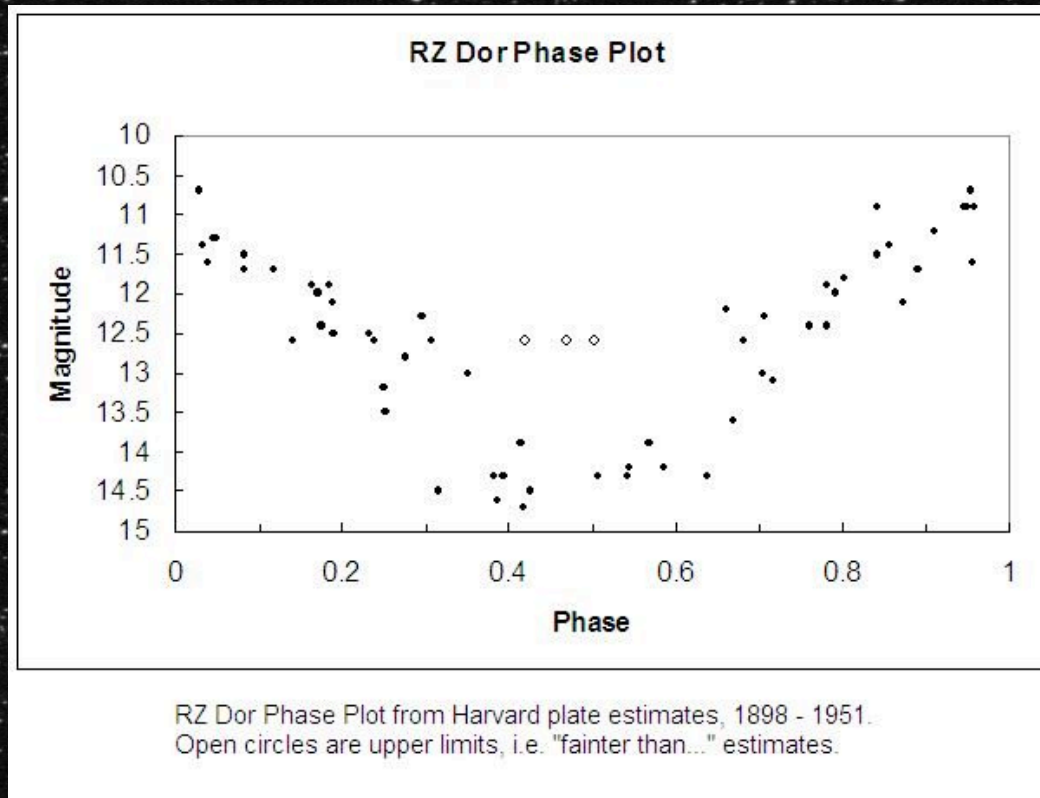
RZ Dor



RZ Dor



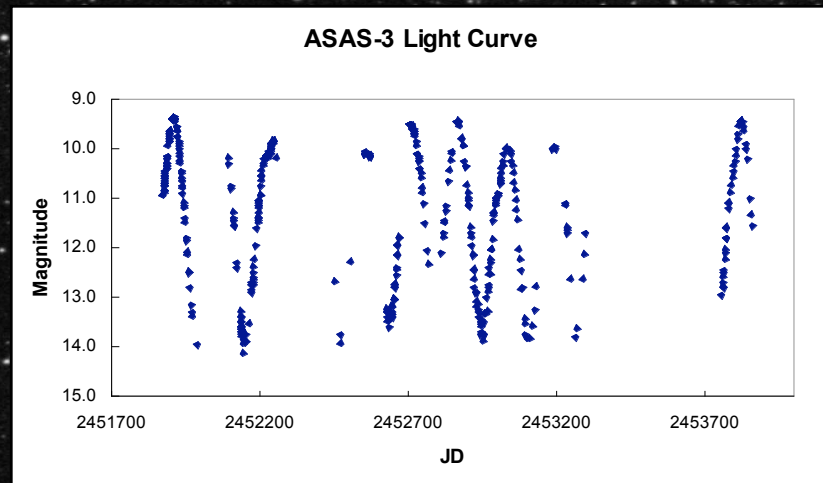
Results



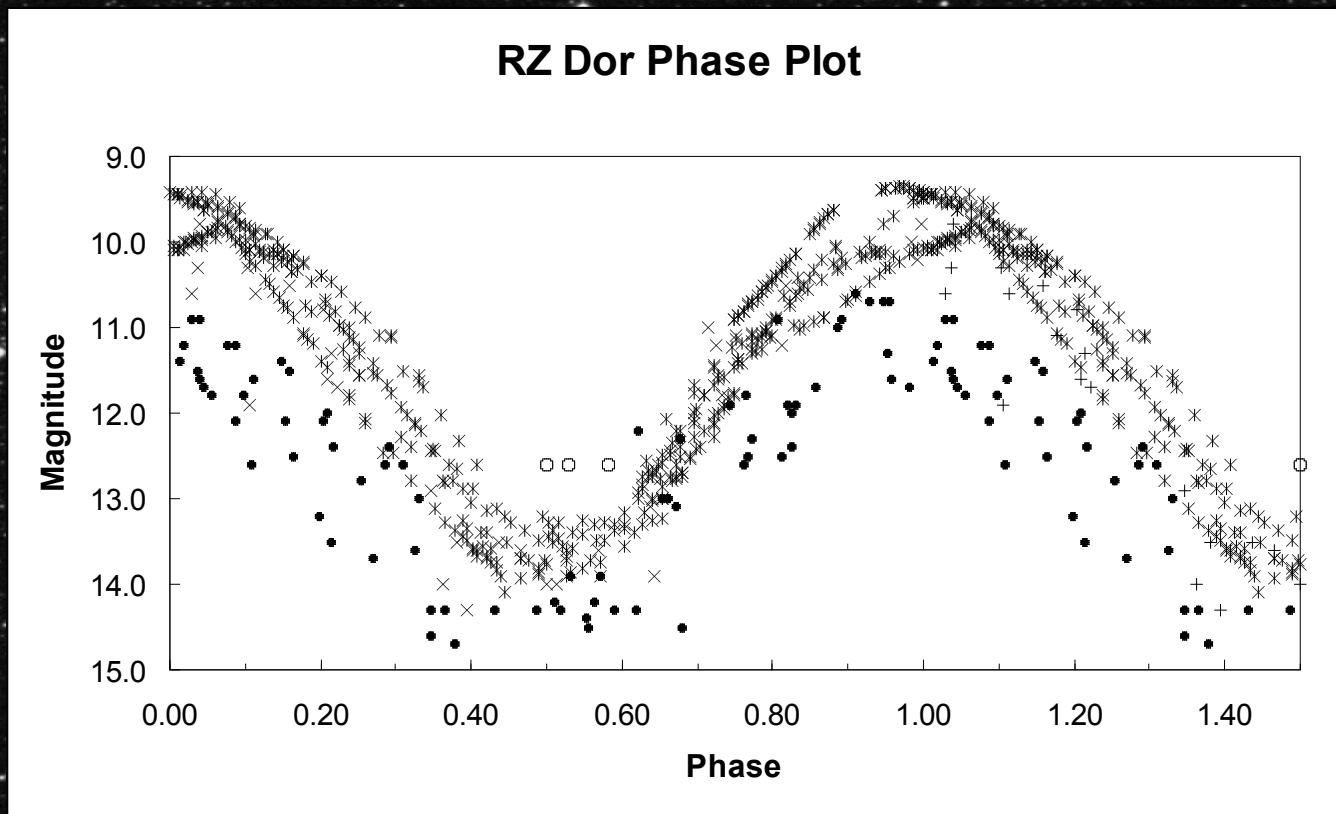
62 Plate Estimates, December 11 1898 to January 6 1951
Phased at 156.8 days.

RZ Dor

- 37 AAVSO Visual estimates December 4 1984 - November 8 2004 (Thank you CR) (Henden 2006b)
- A boatload (454 V-band measurements) of ASAS-3 data November 20 2000 - April 28 2006 (Pojmanski 1997)



RZ Dor – All Data Phased at 158.6 Days



RZ Dor

- RZ Dor is very definitely a Mira-type star
- $JD_{max} = 2453332 + 158.6 \times E$
- Range $V=9.5 - 14.0$
- Stable for 120 years
- Cutting edge science? No.
- Another object defined and categorized? Yes.
- Not possible without multiple independent archival data sources

References

- Gerasimovič, B. P., 1927, Bull. Harvard Obs., 853, 1
- Henden, A. A., 2006a, private communication
- Henden, A. A., 2006b, Observations from the AAVSO International Database, private communication.
- Samus, N. N. et al. 2004, GVCS 4.2
- Pojmanski, G. 1997, Acta Astronomica, 47, 467