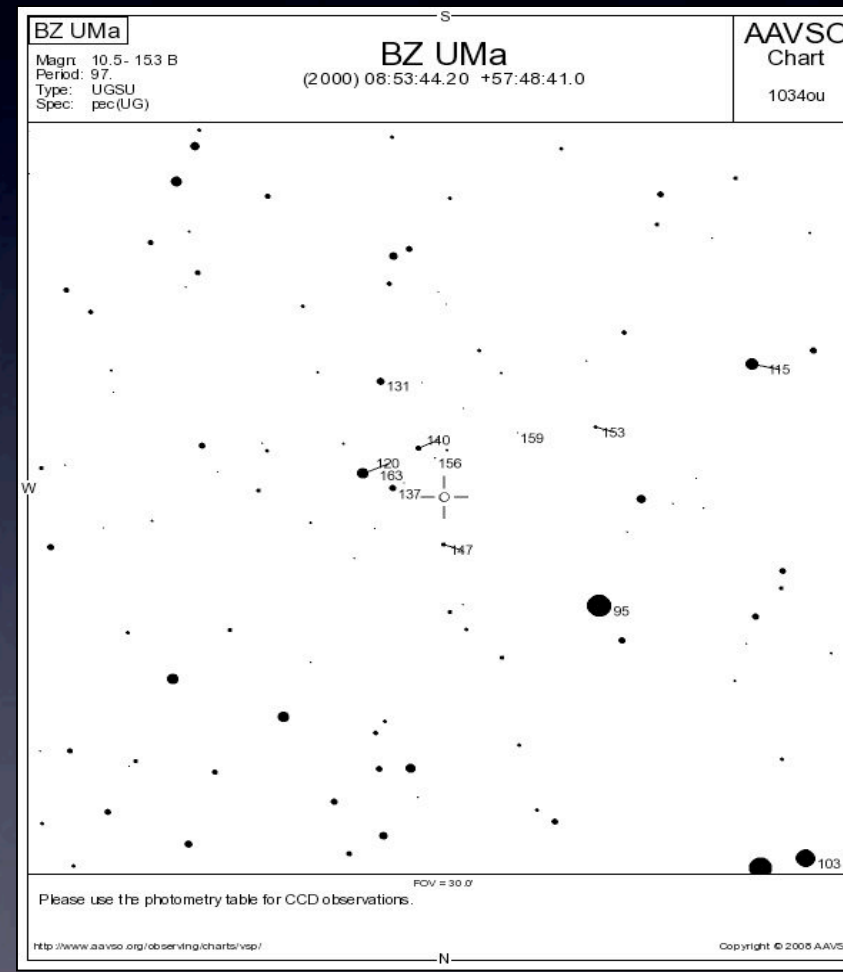
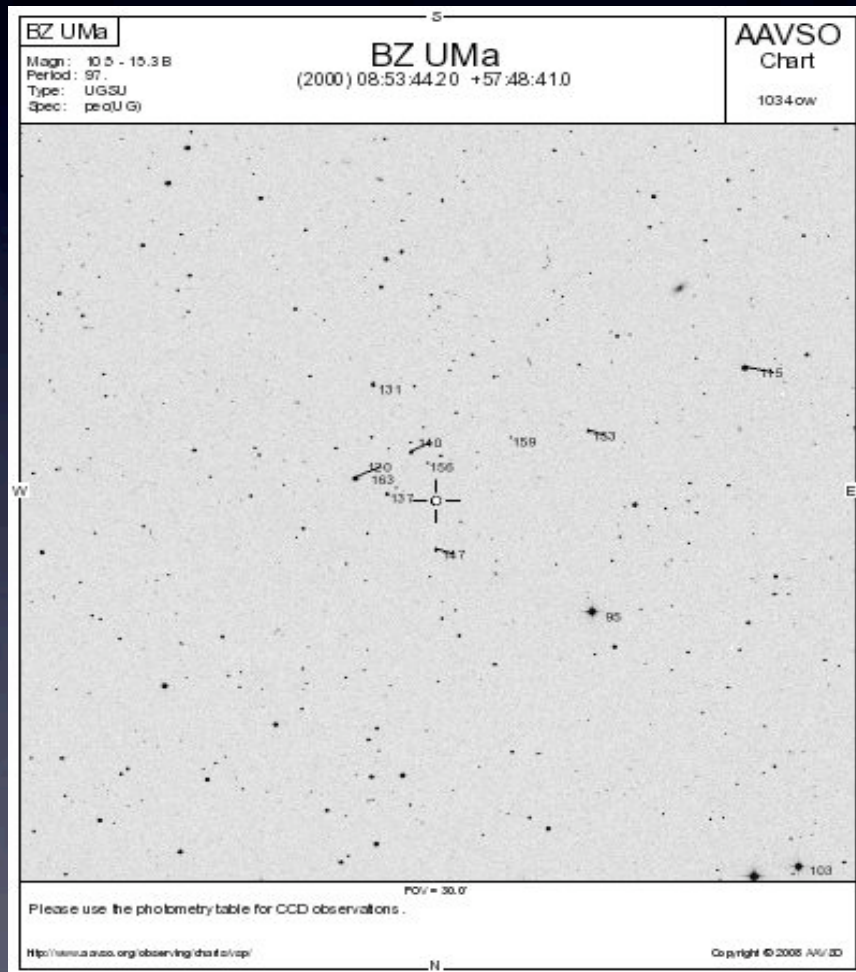
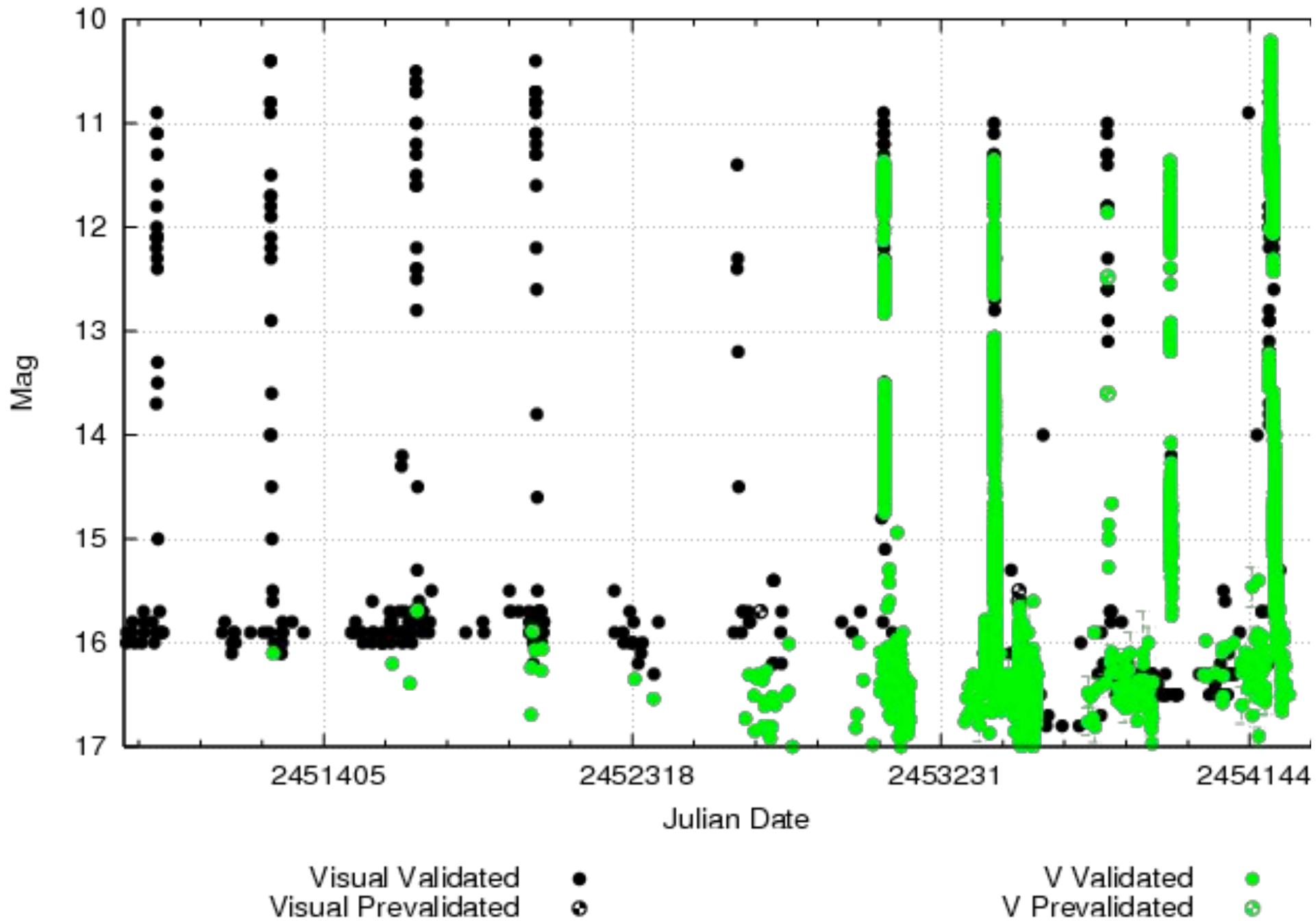


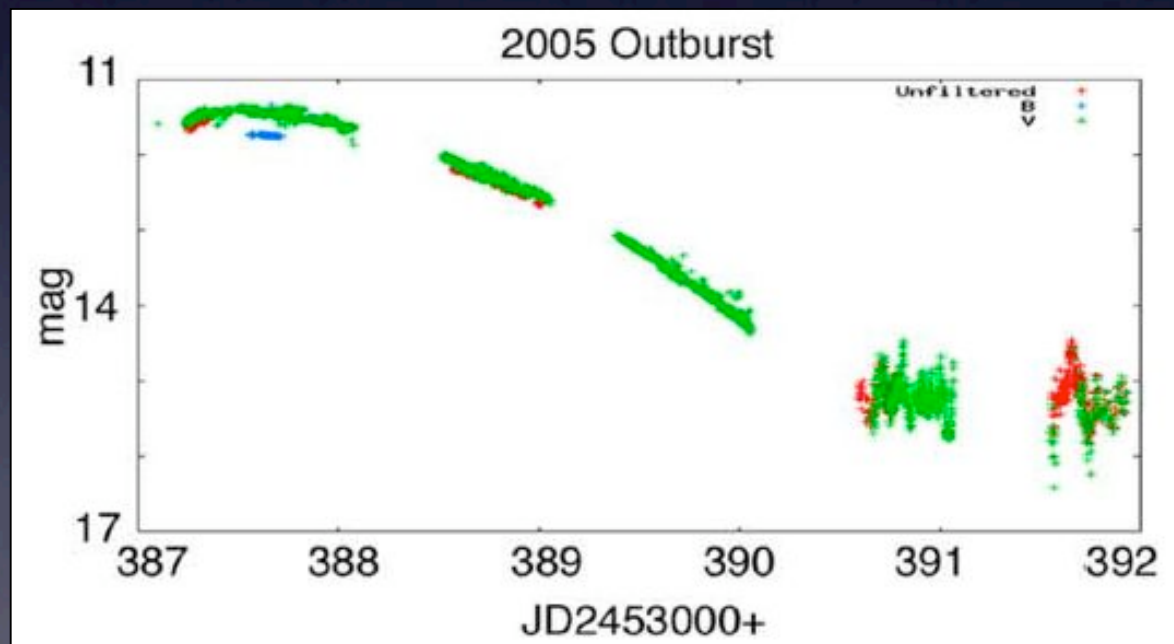
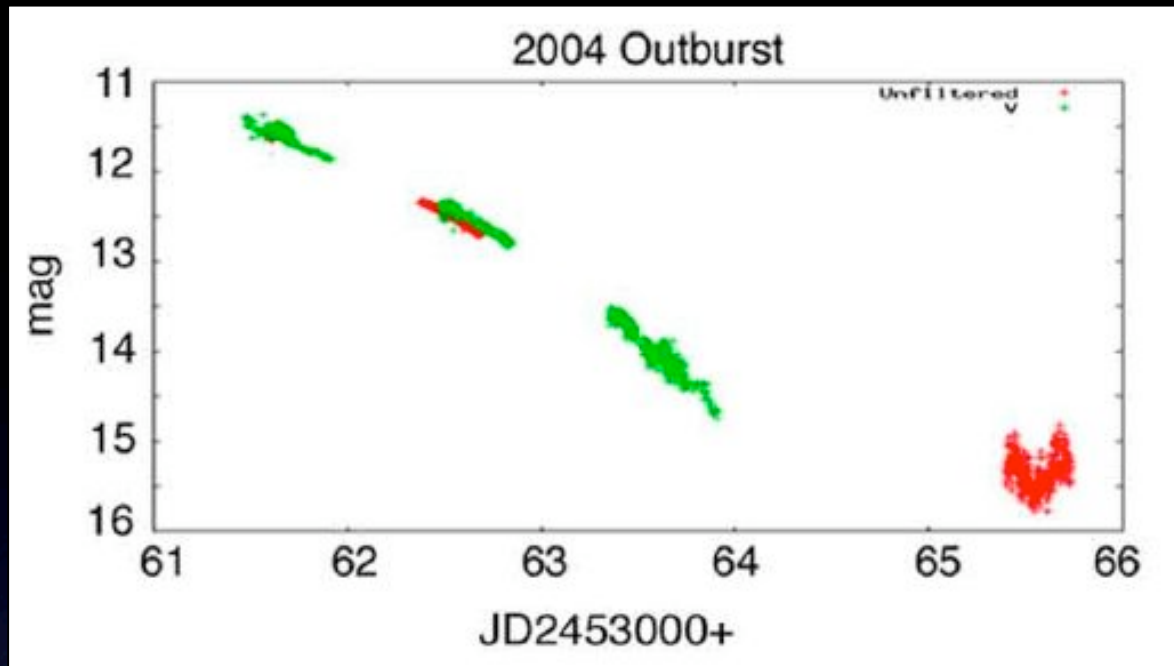
40 Years of Mystery: Unravelling BZ UMa

A. Price & G. Foster, 97th AAVSO Annual Meeting
October 16-19, Nantucket, MA



AAVSO DATA FOR BZ UMA - WWW.AAVSO.ORG





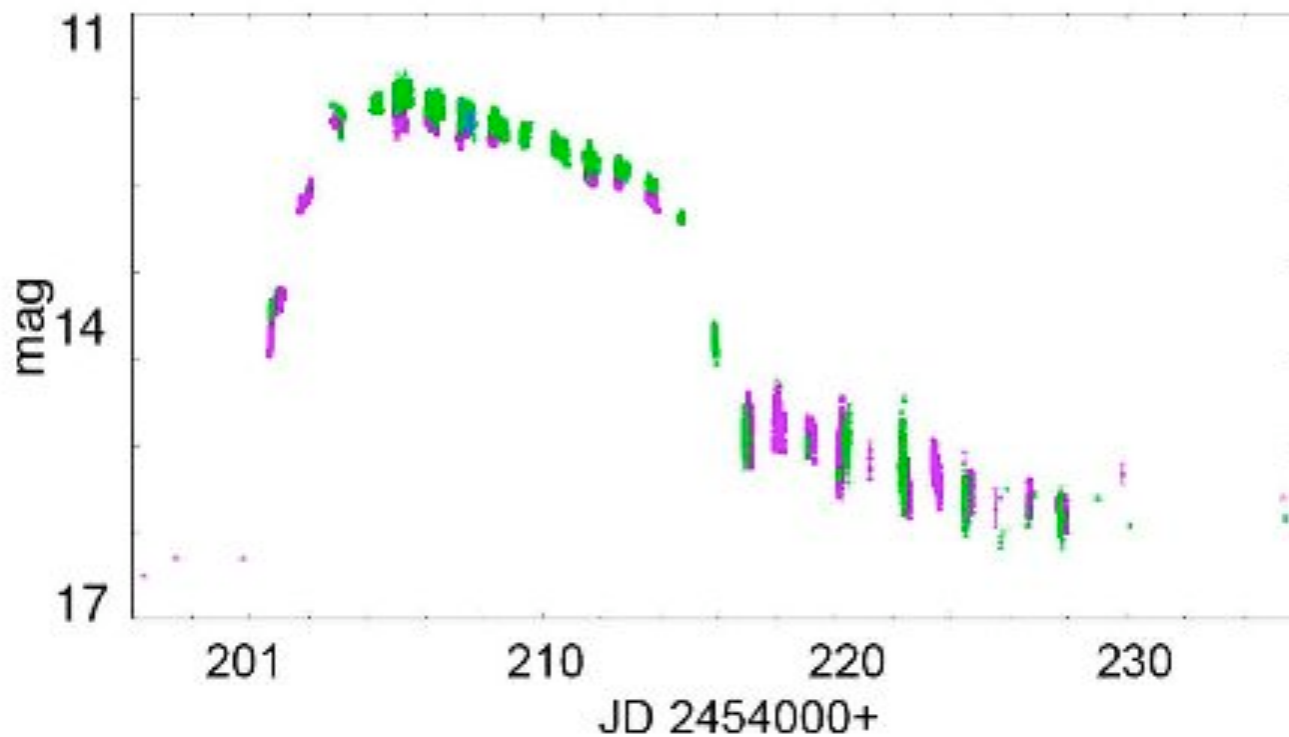
The Case for UGSU

- $P_{orb} = 0.0679d$ (Ringwald & Thorstenson, 1990)
- $q = 0.2$ (Jurcevic, Honeycutt, Schlegel & Webbink, 1994)
- Supercycle = 313 +/- 108d (Price, et al., 2004)
- Strong accretion disc in spectra (Szkody, et al., 2003)

The Case for IP

- Bright ROSAT X-Ray source (Voges, et al., 1999, 2000)
- QPOs in 1999, 2001 and 2004 outbursts (Kato, 1999; Price, et al., 2004) and 1990, 2004 quiescent periods (Ringwald & Thorstensen ,1990; Price & Howell, 2005)
- Strong quiescent flaring (Price & Howell, 2005)
- Peculiar N(V)/C(IV) emission profile similar to other IPs (Gänsicke, 2004)

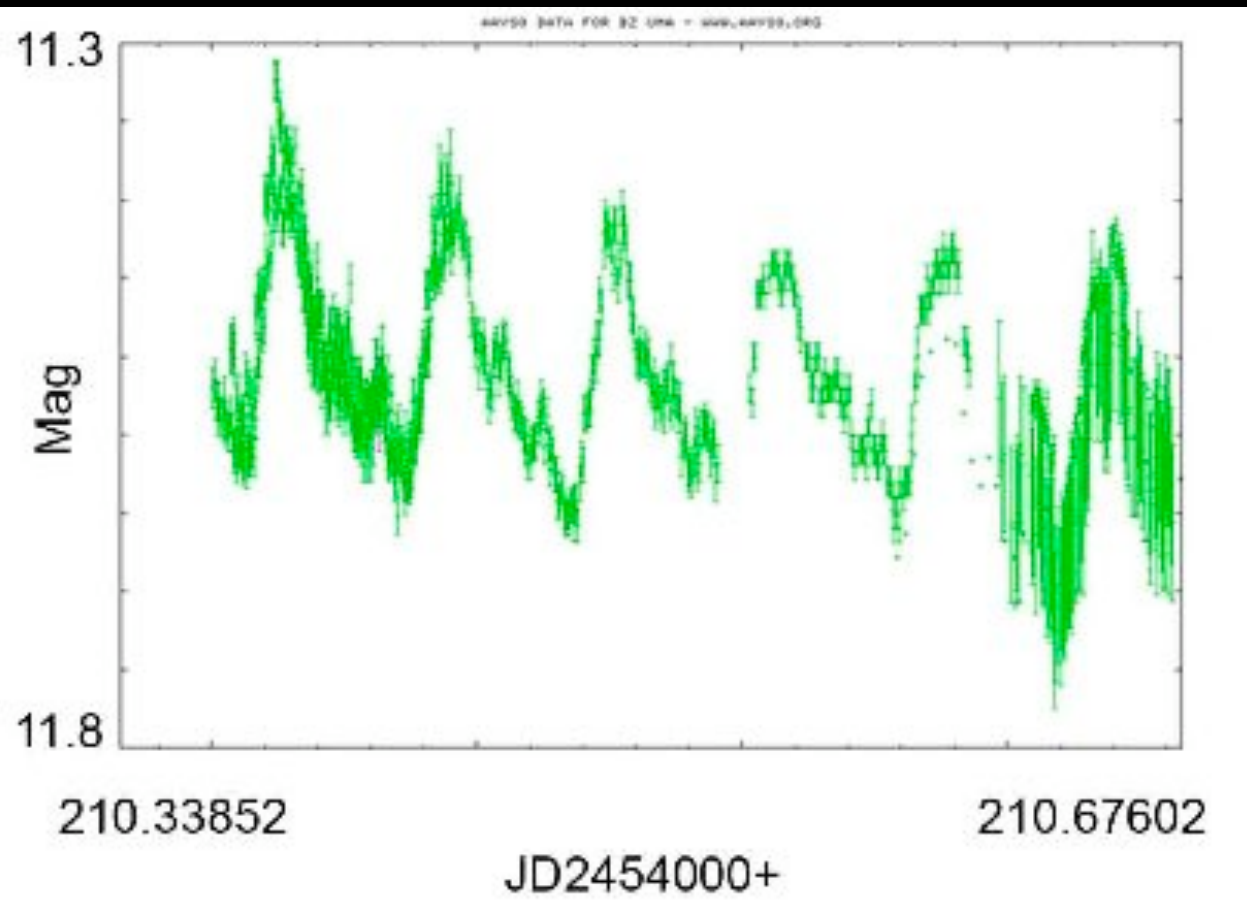
2007 Outburst



Thanks to...

The following observers have contributed to this light curve:

AAM	ARMINSKI, ANDRZEJ	POLAND	ATE	ARRANZ, TEOFILO	SPAIN	BDG	BOYD, DAVID	ENGLAN
BIY	BAILEY, DANIEL ALAN	USA	CDK	COLLINS, DONALD F.	USA	CLW01	DURIG, DOUGLAS T.	USA
DKS	DVORAK, SHAWN	USA	GKA	GRAHAM, KEITH A.	USA	GTZ	GRZYBOWSKI, THOMAS	USA
HBB	HARRIS, BARBARA GAIL	USA	HUZ	HUZIAK, RICHARD	CANADA	KMP	KOPPELMAN, MICHAEL	USA
KRV	KOFF, ROBERT	USA	MDJ	MENDICINI, DANIEL JOSE	ARGENTINA	MDW	MACDONALD II, WALTER	CANADA
MEV	MORELLE, ETIENNE	FRANCE	MUE	MCDANIEL, RONALD E.	USA	NFD	Nieuwenhout, Frans D. J.	NETHEF
OAR	OKSANEN, ARTO	FINLAND	OJJ	OTT, JOHN JOSEPH	USA	QNK	QUINN, NICK	ENGLAN
SDB	STARKEY, DONN R.	USA	SFY	SHEARS, JEREMY	ENGLAND	TJV	TEMPRANO, JAVIER	SPAIN
TRE	TOMLIN, RAY E.	USA	WGR	WALKER, GARY	USA			



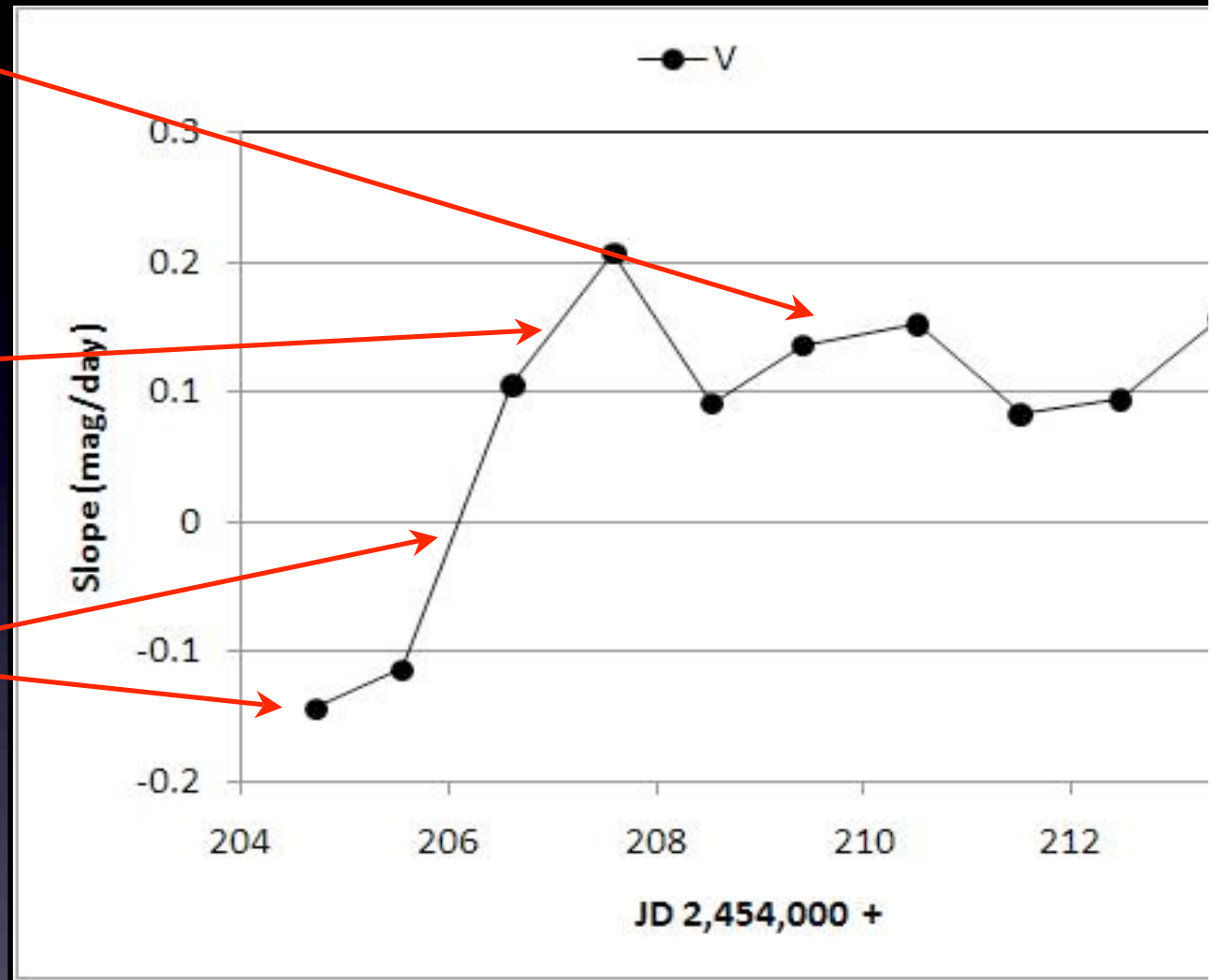
The following observers have contributed to this light curve:

ATE	ARRANZ, TEOFILO	SPAIN	BDG	BOYD, DAVID	ENGLAND	CLW01	DURIG, DOUGLAS T.
GKA	GRAHAM, KEITH A.	USA	SFY	SHEARS, JEREMY	ENGLAND	TRE	TOMLIN, RAY E.

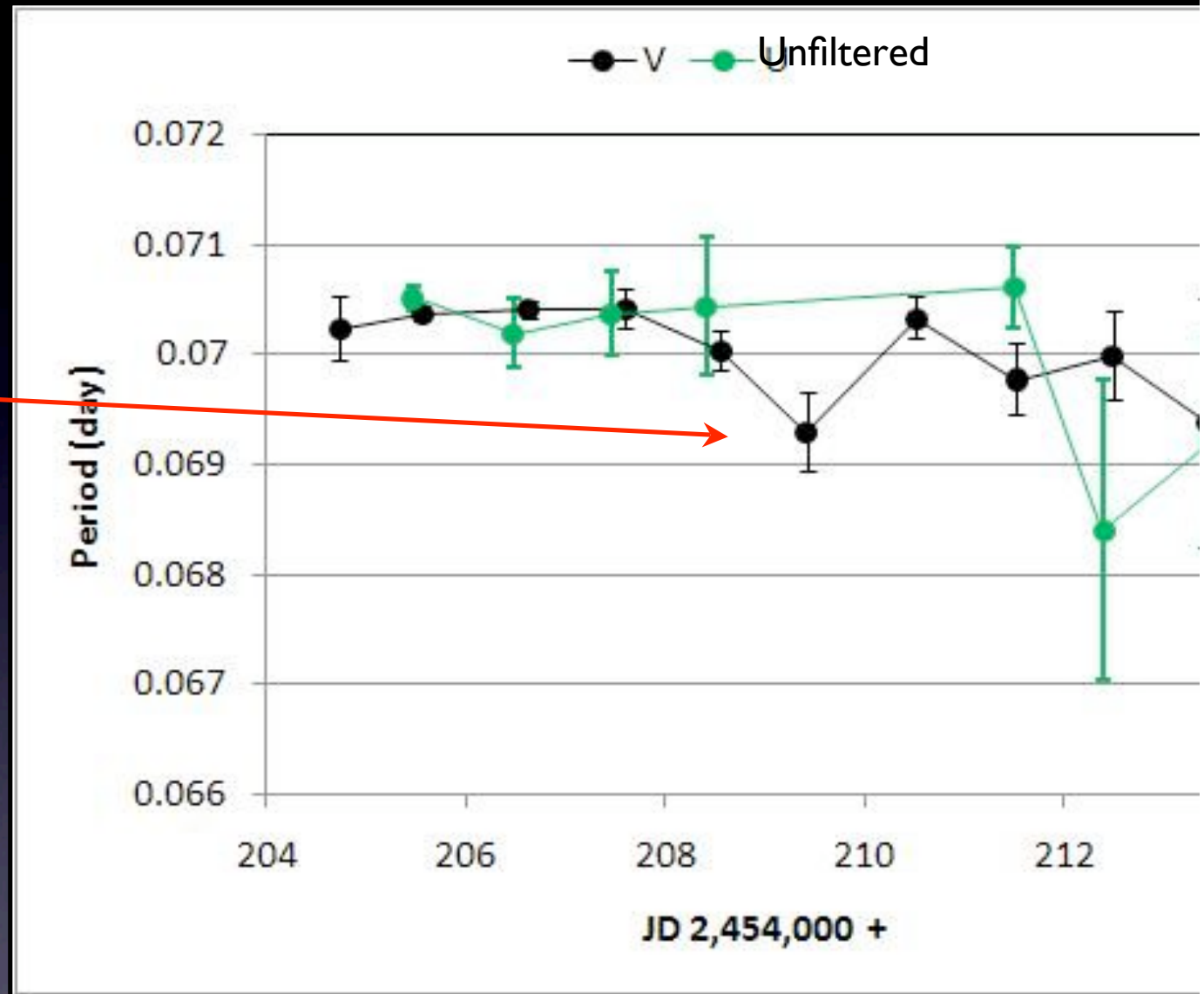
Slow fading...

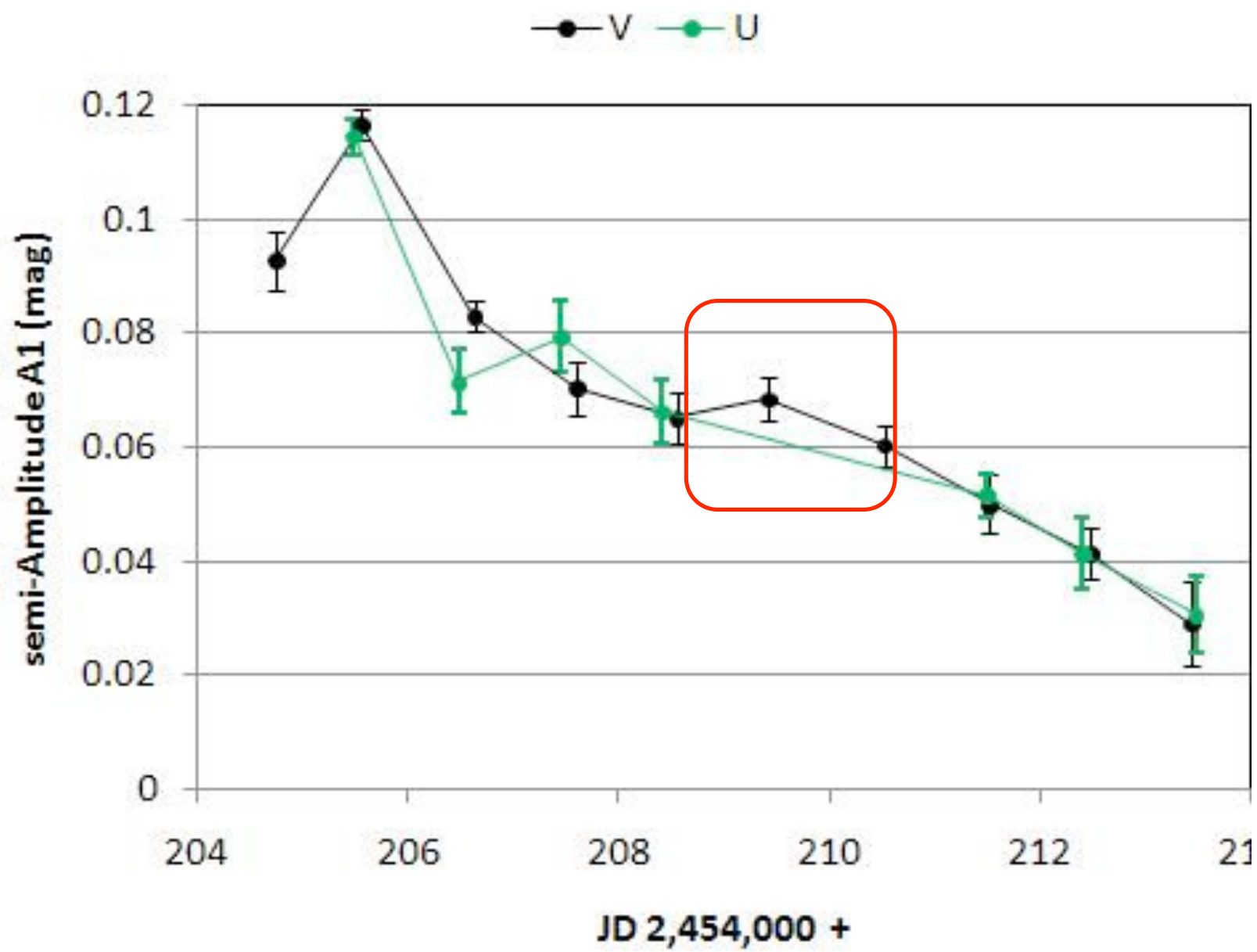
Rapid fading at
0.1 mag/day

Brightening
0.1 mag/day

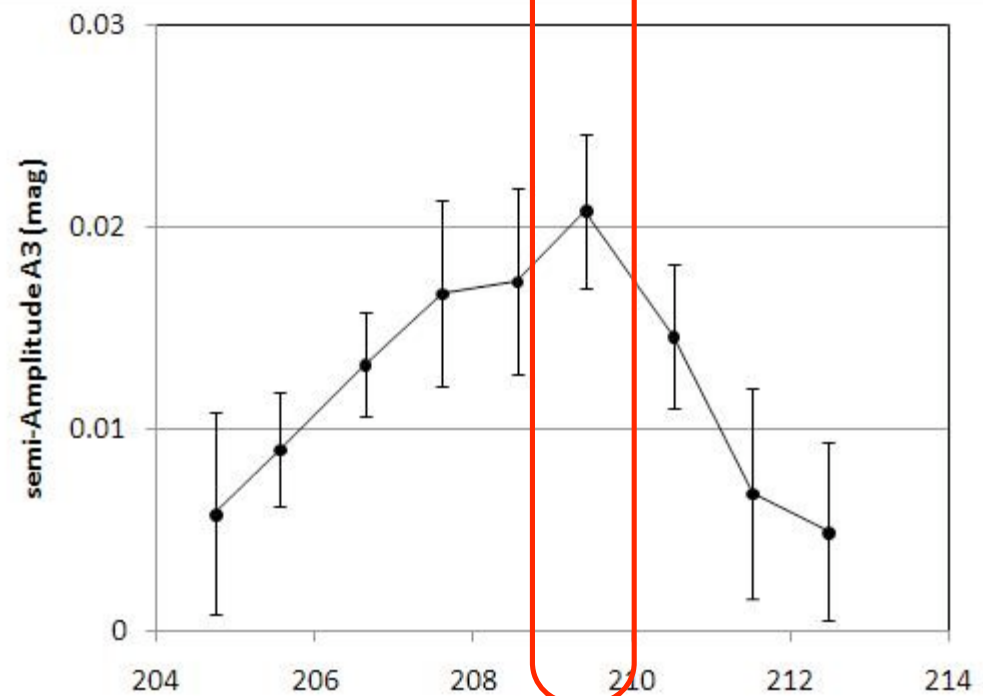
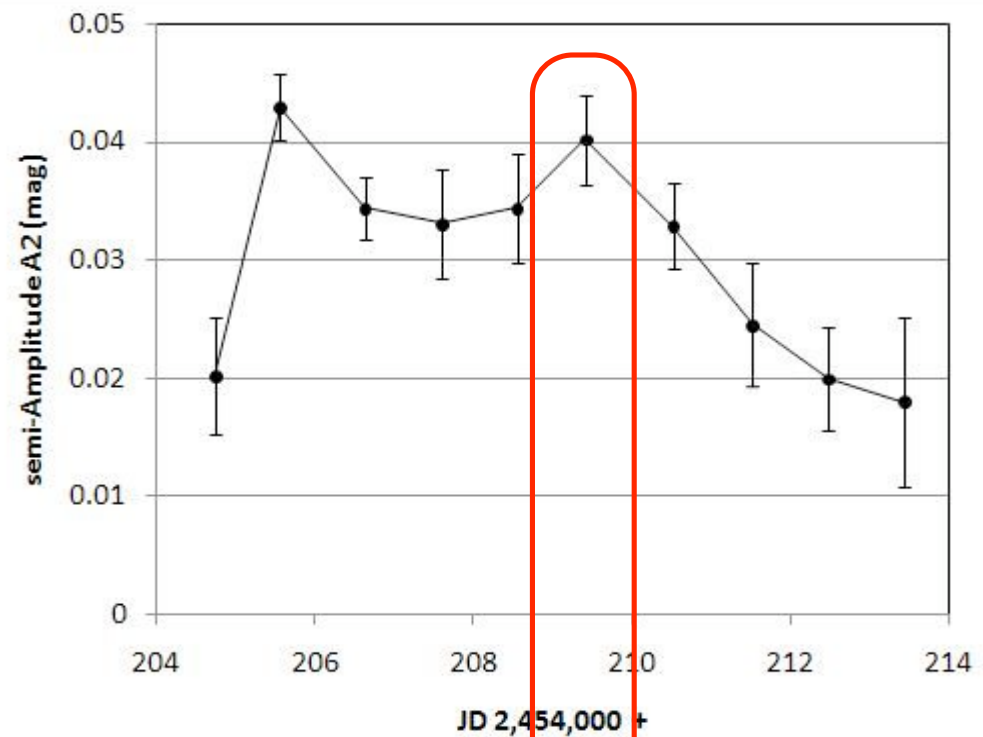


Interesting
drop in period.
Suggestions?



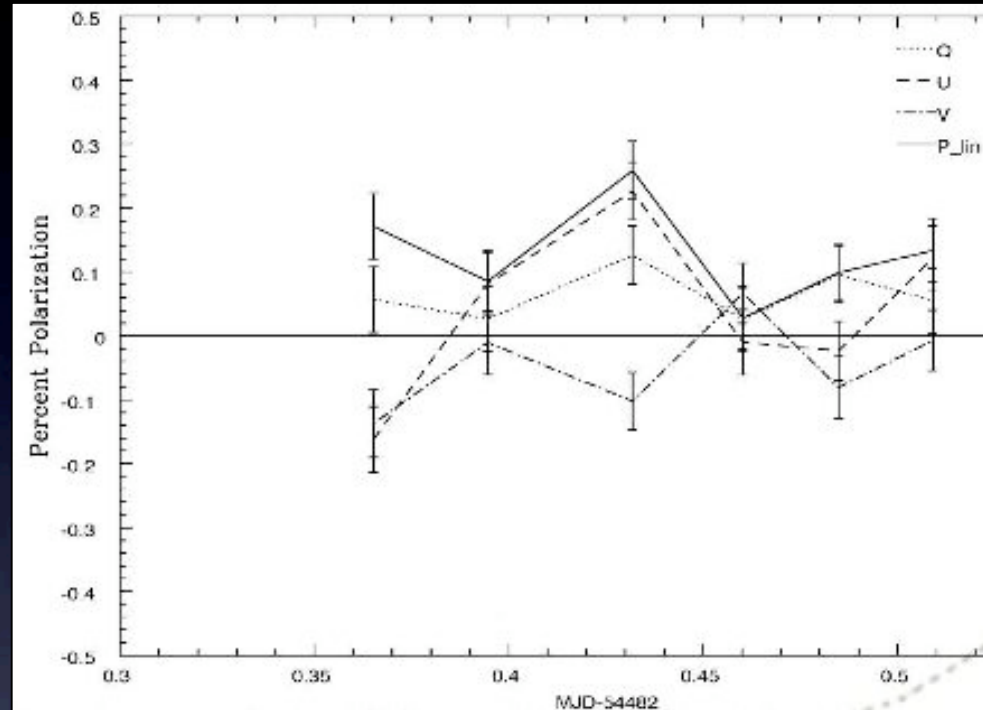


- Amplitudes of 2nd and 3rd harmonics are also variable
- What is going on at day 209? Harmonics increase yet the fundamental temporarily ceases?



Polarimetry

- Hallmarks of IPs are polarization and X-Ray spin period (Patterson, 1994)
- IPs mostly have circular polarization of 0 and a few percent
- March 17, 1980 measured circular polarization of $0.077 \pm 0.17\%$ (Liebert & Stockman, 1980)
- Dual-beam Imaging Polarimeter (DBIP) on UH 2.2m on Mauna Kea (Masiero, Hodapp, Harrington & Lin, 2007)
- Six Stokes V measurements on Jan. 17, 2008 over 1/2 hour.
- Upper limit of $<0.2\%$ (error $<0.1\%$) circular polarization.



Joseph Masiero

BZ UMa is likely a UGSU

- Superhumps!
- No polarization
- Based on current knowledge, we think it can be classified as a UGSU
- It is likely a hybrid with more UGSU than IP features
- Next 40 years will be interesting...

Next steps

- Will submit to a journal
- In a dream world, we'd get 6 hours of X-Ray time
- Longer polarization measurements in red and infra-red
- Further amateur monitoring - both visual (supercycle) and photometric (QPOs and superhumps)
- *Thanks to the observers!*