Home
About the AAVSO
Variable Stars
Membership
Meetings
Publications
Star Charts
Contributing Data
Accessing Data
Observing Programs
Hands-On Astrophysics

CCD Views: June 2001

Back to the online archive.

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS
25 Birch Street, Cambridge, MA 02138 USA
Tel. 617-354-0484 Fax 617-354-0665
http://www.aavso.org

C C D V I E W S

June, 2001 Vol 2 No 1

Table of Contents

---

1. INTRODUCTION TO THE NEW CCD VIEWS

This is the first issue of a new electronic edition of CCD Views. This newsletter is published by AAVSO Technical Staff (Aaron Price) and the AAVSO CCD Committtee Chair (Gary Walker) for variable star observers with an interest in CCD observing. Both Aaron and Gary are avid CCD variable star observers. Our goal is to support your observing program with lists of new targets, new observing program ideas, summary of recent activity of faint variables, and the publication of other issues important to CCD observing. I will add comments on stars (mostly LPVs) and other news from time to time. We want to provide the initial ideas for observing programs.

CCD Views will be published bimonthly and as needed. It will be distributed primarily via e-mail and will be archived on our WWW site. To receive CCD Views send a message to majordomo@aavso.org with "subscribe ccdviews" in the body of the e-mail.

This is a new format for CCD Views so we anticipate some tweaking and minor changes over the first few issues. Newsletters like this normally do not hit their stride for a few months, so please bear with us. We are eager to receive any feedback about what you may like, don't like, and what you would like to see in future editions. Please send your comments to ccdviews@aavso.org.

Thank you and we hope you find this new publication useful and informative!

Good observing!
Janet Mattei (JAM)
Director

---

2. RARE SUPEROUTBURST OF AL COM

The SU Ursae Majoris-type dwarf nova AL Comae Berenices is undergoing a rare superoutburst. CCD observers are urged to search for superhumps (small-amplitude periodic oscillations), making observations every 5 minutes for as long as possible during the night and recording the time to four decimal places while this star is in superoutburst. Please use an I filter if you have one, otherwise use V filter. For more information consult AAVSO Alert Notice #283 at the URL below:
http://www.aavso.org/alerts/alert283/alert283text.stm

This star has a very interesting behavior and superhumps during superoutburst. We had excellent CCD coverage during its 1995 superoutburst and we published the results in a collaborative paper (Howell et al 1996, Astr. Journal,..). We would like to do it again with this superoutburst if we have enough coverage.

Please submit your observations to the AAVSO as soon as possible so that we can began working with the data and coordinate further observations.

Here is an example of good photometry in I by Doug West:

MAY 25.1167	2452054.6168	13.50	WJD	CCDI
MAY 25.1203	2452054.6204	13.82	WJD	CCDI
MAY 25.1214	2452054.6214	13.63	WJD	CCDI
MAY 25.1277	2452054.6278	13.62	WJD	CCDI
MAY 25.1313	2452054.6313	13.51	WJD	CCDI
MAY 25.1345	2452054.6346	13.51	WJD	CCDI
MAY 25.1381	2452054.6382	13.50	WJD	CCDI
MAY 25.1419	2452054.6419	13.55	WJD	CCDI
MAY 25.1455	2452054.6455	13.42	WJD	CCDI
MAY 25.1491	2452054.6492	13.61	WJD	CCDI
MAY 25.1510	2452054.6511	13.55	WJD	CCDI
MAY 25.1548	2452054.6548	13.53	WJD	CCDI
MAY 25.1584	2452054.6584	13.36	WJD	CCDI
MAY 25.1620	2452054.6621	13.52	WJD	CCDI
MAY 25.1656	2452054.6657	13.34	WJD	CCDI

Here are some recent observations of AL COM:

MAY 30.1882	2452059.6882	13.8	SXN	Y
MAY 30.7354	2452060.2354	13.7:	BTH	M
MAY 30.9325	2452060.4326	13.9	JCN	K
MAY 30.9402	2452060.4402	14.04	SMI	CCD
MAY 30.9459	2452060.446	13.7	MGH	KY
MAY 31.9375	2452061.4375	13.9	JCN	K

---

3. SU UMA CAMPAIGN

Please remember to monitor SU UMa closely through the end of the month. A colleague from The University of Leicester has been awarded time on RXTE to observe the dwarf nova SU UMa regularly through

June. Please keep a close eye on this star and report your observations regularly to the AAVSO as our colleague is checking the Quick Look File often. We are also periodically sending him data files so that he can correlate his x-ray data with the optical data. Please use the SU UMA visual charts to make your estimates.

SU UMa belongs to a subclass of dwarf novae which has frequent, faint, and narrow outbursts along with infrequent, long, and bright superoutbursts. Superhumps appear during such outbursts at periods of 2%-3% of the orbital period. In fact, these superhumps are important because scientists often use them to determine the orbital period of the system.

For more information read "Outburst Characteristics in the Dwarf Nova SU Ursae Majoris" by P. Rosenzweig, et. al. in P.A.S.P Volume 112, Issue 771, pp. 632-641. The abstract is available via ADS at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=2000PASP..112..632R&db_key=AST&high=39ad50824503046
(URL should be on one line)

SU UMA was featured as the February 2000 Variable Star of the Month available at http://www.aavso.org/vstar/vsotm/0200.stm .

In addition, SU UMa recently underwent another outburst as reported in News Flash #791 with the following observations:

UT	Mag.	Initials	UT	Mag.	Initials
MAY 29.9380	14.2	PYG	MAY 30.9270	11.8	GUN
MAY 30.1430	<13.9	SXN	MAY 30.9485	12.2	RMQ
MAY 30.8950	<13.4	GUN	MAY 30.9687	12.08	CCD SMI
MAY 30.9270	11.8	GUN	MAY 31.2784	11.9:	LMK

This campaign was originally reported in News Flash #772.

---

4. RARE GU SGR FADING

As originally reported in IAU Circular #7619, GU SGR (1818-24), a R CrB star which doesn't fade often, is beginning to fade quickly after being at maximum light for about 8 years. As of the end of May the star has faded from 10.4 to 16.6. During the last minimum in 1988 it reached mag 16.4.

Thanks to the following observers for notifying us of this fading via their observations:

S. Otero, Buenos Aires, Argentina
S. O'Connor, Montreal North, QC
R. Stubbings, Druin, Victoria, Australia
A. Pearce, Nedlands, W. Australia

Recent observation of GU SGR:

MAY 20.2938	16.6	OCN	CCDV
MAY 20.3014	<15.7	OCN	CCDR
MAY 22.6480	<14.6	PEX	
MAY 26.8580	<14.6	PEX	

---

5. COMMENTS ON FAINT LPV'S BY J.A.M.

Below is a list of mostly faint LPVs that may be of interest to CCD observers next month. This list combines elements of the AAVSO

Bulletin, Quick Look files, and long term data. Stars listed are generally faint and either in need of more observations or show some strange behavior that needs to be studied. We realize that many of these objects have charts that need improvement. Please continue to use these charts until we are able to release new ones. It is important for these long term variables that new charts and comparison stars are not issued haphazardly.

0045+33 RR AND <9.1-15.1>
Minima need to be better monitored to determine behavior and to predict future minima. Use AAVSO f scale chart and comp stars.

0159+12 S ARI <10.9-15.2>
Cycles in 2000 and 2001 are not well monitored. Go for early morning coverage to reduce the seasonal gap.

0212+81 Z CEP <10.8-15.4>
Although circumpolar, large gaps exist around minima. Next predicted minima is June 18.

0242+37 AI PER 11.0-15.5
Large gaps exist in the light curve, particularly around minima. CCD charts with B-V and V-R values are available on the AAVSO FTP site.

0452+56 TX CAM 8.1-(15.3
Another northern polar very poorly monitored in 2000.

0513-16 X LEP 8.8-15.6
Needs predawn observations as it is fading to minimum.

0728-20B Z PUP <8.1-14.5>
Very poorly monitored in 2000. Presently fading to a minimumin July.

1353-04 SY VIR
Maxima in 2000 was about 1 magnitude fainter at 10.5. Minima poorly observed. Use AAVSO e-scale chart that has well measured and faint comp stars.

1405-12A Z VIR
Needs more data around the minimum and on the ascendancy branch of the light curve. Use e-scale standard chart.

1853+16 EU AQL
In need of more observations throughout the entire light curve. Use e-scale chart even though it may need a better comp star sequence.

1855-12A ST SGR
Very poorly monitored around minimum. Go for it now. Predicted minima is July 5. Use f-scale preliminary chart to make the estimate. An e-scale standard chart is available for finding the field.

1906+43 ST LYR
For several years it has been poorly observed near minima making predictions very difficult.

1909+31 EL LYR
Needs more observations around minima on June 13. The e-scale preliminary chart unfortunately is inadequate for it needs fainter magnitudes, do the best you can.

1922+01 TU AQL
Needs more observations near minima in order to determine the true minima brightness. Beware of close by magnitude 11 star. Use e-scale preliminary chart.

2003+57 S CYG
Needs positive observations around minima. Use e-scale standard chart.

2008-22 W CAP
Badly in need of more observations, particularly around minima predicted for June 26.

2011-39 RT SGR
Very badly in need of observations at all phases of its light curve. CCD observers may be able to get positive observations better than visual using the poor sequence on our d-scale chart. Go for it.

2012+09 RU DEL
Needs more positive observations around minima.

2022-40 U MIC
The star is in desperate need of more observations at all phases. Only a few observatiosn exist since 1999. Presently it is fading to minimum predicted for August 7.

2042-15 U CAP
Another LPV in desperate need of observations at all phases. Has a good e-scale standard chart.

2056-27 RR CAP
Needs more observations around minima, predicted for early July.

This is only meant as a guide and should not be considered a comprehensive list of LPV CCD targets. Please let us know whether you find this list useful by sending comments to ccdviews@aavso.org.

---

6. RECENTLY PUBLISHED CCD CHARTS

Please remember that over 40 new CCD charts were released in January on the AAVSO FTP site. Of these 40, 19 are Miras, 10 are CVs and the rest belong to a wide variety of types. This brings the total number of CCD charts to above 70. We expect to be releasing many more in the next month or so. All of these charts are available at the URL below:

http://www.aavso.org/committees/ccdcharts.stm

---

7. APPULSE OBSERVATION EXPERIMENT

An "appulse" is the near approach of one heavenly body to another. We would like to conduct an informal experiment to observe CVs close to the full Moon. These are CVs that cannot be observed by visual

observers because of lunar interference.

Below is a list of five CVs that will be around 20 degrees from the full Moon on June 6. Please observe these stars, at least once per night, on every possible night between June 2 and June 10 UT inclusive. There may be a large background gradient or glints in the CCD field; do your best to get good photometry. We are only asking for observations at the 0.1mag level of accuracy; anything more precise will be difficult because of such sky gradients and the probable faintness of the CVs. If at all possible, use an R or an I filter to decrease the scattered moonlight. For any filter, go ahead and report your data based on the chart magnitudes, but indicate what filter was used.

Designation	Name	Distance(deg)	Range(1)
1542-42	AB NOR	26.2	13.9p-<19.0j
1633+08	V544 HER	29.6	14.5p-20p
1751-14	MU SER	16.1	7.7v-<21p
1805-14	UZ SER	19.2	11.9v-16.0v

Please report your results and comments to ccdviews@aavso.org, even if you catch a CV in outburst. This e-mail address will be checked many times per day so such an outburst will make it into the News Flash. These can be informal reports and do not need to be in the official AAVSO format. If we find that it is possible to perform .1 mag level photometry this close to the full Moon then every month we will publish a list of CVs to observe for the 4 days prior to and after the full moon.

Charts for these stars are available on the AAVSO Variable Star Chart CDROM or at http://charts.aavso.org.

(1) From "A Catalog and Atlas of Cataclysmic Variables" by Ronald Downes, et. al. available at http://icarus.stsci.edu/~downes/cvcat/

---

8. EXTRASOLAR PLANETARY TRANSIT MONITORING OF IL AQR

In June, 2 windows of opportunity exist for the possible detection of planetary transits around IL AQR. 5 minute integrations should be made during the observing windows. Transits could last 2-4 hours and could dim the star by as little as a few hundredths to a few tenths of a magnitude.

Planet	Predicted Transit Time(UT)	Full Window
Gliese 876b	2452079.97 (11:17 June 19)	Jun. 14-26
Gliese 876c	2452080.9 (09:36 June 20)	Jun. 14-26

The position of IL AQR/Gliese 876 is:
R.A. = 22h 53m 16.7s Decl. = -14 degrees 15' 49" (2000)

For much more detail about this possible event consult AAVSO Alert Notices #281 & #282 at the URLs below:
http://www.aavso.org/alerts/alert281/alert281text.stm
http://www.aavso.org/alerts/alert282/alert282text.stm

CNN & Wired.com also covered this subject at these URLs:
http://www.cnn.com/2001/TECH/space/05/22/planet.search/index.html

http://www.wired.com/news/print/0,1294,43865,00.html

CCD Views is published bimonthly and when circumstances warrant via e-mail. An archive is available at http://www.aavso.org/ccdviews/ . Please send comments and suggestions to aaronp@aavso.org.

To receive CCD Views via e-mail send a message to majordomo@aavso.org with "subscribe ccdviews" in the body of the e-mail. To unsubscribe, place "unsubscribe ccdviews" in the e-mail.

The AAVSO has many free online publications including "Eyepiece Views", a similar newsletter intended for visual observers. To learn more and subscribe visit: http://www.aavso.org/mailinglists.stm

Good observing!

Aaron Price, AAVSO Technical Assistant (PAH)
Gary Walker, Chairman of the AAVSO CCD Committee (WGR)

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS
25 Birch Street, Cambridge, MA 02138 USA
Tel. 617-354-0484 Fax 617-354-0665
http://www.aavso.org
