



CCD Views: October 2001

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C C D V I E W S

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1. INTRODUCTION: INVITATION TO PRECISION CCD PHOTOMETRY WORKSHOP

We'd like to take this moment to invite you to a special Precision CCD Photometry workshop to be held on Friday, Nov. 2, 2001 during the 90th AAVSO Annual Meeting in Somerville, MA. Arne Henden, who will lead the workshop, will address concepts of differential photometry, special techniques for AAVSO program stars (eclipsing binaries, GRBs, CVs, etc.), and other CCD-related topics. More information on the Workshop and the Annual Meeting visit <http://www.aavso.org/meetings/> .

In addition we regret the delay in getting this issue out while we prepared for the Annual Meeting.

Aaron Price (PAH)
 Technical Assistant, AAVSO

Gary Walker (WGR)
 CCD Committee Chair

2. NEW SCHEDULE OF CATAclySMIC VARIABLE MONITORING FOR XMM-NEWTON OBSERVATIONS

Astronomers at University of California, Santa Barbara, will be observing several cataclysmic variables in the coming weeks in X-ray and near-ultraviolet wavelengths with the X-Ray Multi-Mirror Telescope (XMM-Newton) orbiting observatory. As mentioned in Alert Notice #290 & News Flash #850, they have requested our assistance in monitoring these objects before, during, and after the satellite observations in order to provide optical data for correlation.

Observers, particularly CCD observers, are urged to monitor closely as many as possible of the targets listed below over the next several weeks so that there will be good knowledge of the activity state (outburst, quiescence, high or low state, etc.) of each target at the time of the satellite observations.

** Please note that many of the observations have been rescheduled due to a revised observing timetable received from our colleagues.

Target	Type	Range	Date of Observation
0409-71 VW Hyi	UGSU	8.5-13.8V	October 19
0812-48 IX Vel	UX (Novalike)	9.1-10.0v	Postponed
0745+15 PQ Gem	DQ (Intermed. Polar	14.1-14.5V	Postponed
0749+22 U Gem	UGSS	9.1-15.2V	Postponed
0831+48 EI UMa	UG	13.4-14.9P	Postponed

Periodic monitoring has still been requested for the postponed observations. New dates will be published in the News Flash, CCD Views, and on our web site when we get them.

Charts are available at <http://charts.aavso.org/> .

3. NEW METHOD OF UPLOADING LARGE NUMBERS OF CCD OBSERVATIONS

We have added a new feature to the AAVSO web site which makes it easier to submit large volumes of CCD observations. Visit the URL below for more information on how to use the new system.

<http://www.aavso.org/cdata/webobsccd.shtml>

Basically, you upload your CCD observations in one of two formats (a

default generic format or the format that AIP4WIN creates) using a web browser. You then fill out a form giving us the star information we need (comp star, chart info, etc.). Then the program will convert your file to the Official AAVSO Format and place it in our database.

We hope you will find this new method of uploading CCD observations very quick and easy. We would like to ask our CCD observers to please feel free to upload any backlog of CCD observations you have from the past. It is never too late to send in data!

4. OBSERVING FAINT CV'S AT QUIESCENCE

One area where CCD observing alone can increase our knowledge of variable stars is by studying cataclysmic variables (CVs) at quiescence. This is the time in between outbursts where they are faint and relatively quiet as seen from Earth.

In 1996 a paper was published by L.N. Sproats, S.B. Howell, and K.O. Mason titled "Infrared colours, distance determination and absolute magnitudes of a sample of faint cataclysmic variables." In this paper they called for further observations of a select list of faint CVs believed to be in the galactic halo. This request was made to help "redress a bias" in our knowledge of CVs by only studying optically bright ones, which happen to be either close by or extra luminous.

Below is a quote from their paper:

"Another question posed by these intrinsically faint systems, and one which can be addressed by further observations, is to what extent their low luminosity reflects conditions in the quiescent state alone, or if the overall accretion rate of the system is low. To assess this we need information about the luminosity generated during outbursts, i.e statistics on outburst amplitudes, durations, and recurrence times. Because these systems are (by definition) very faint during quiescence, however, they have not been well monitored and information on the outburst duration and recurrence times, in particular, is incomplete... There is clear need for improved observational data before this question can be conclusively laid to rest."

The AAVSO currently has observing charts for 23 of the 34 stars in their program. Below is a list of those 23 stars along with comments by J.A.M. If possible, please add these stars to your observing program. For the some of the really faint ones this will be quite a challenge. Good long term data is needed on all of them. Are you up to it?

Unless otherwise noted, the magnitude ranges are from "A Catalog and Atlas of Cataclysmic Variables Living Editions" by Ronald Downes, et. al. available at <http://icarus.stsci.edu/~downes/cvcat/> .

0006-12 WW Cet 9.3V-15.7V

This star is fairly well monitored by visual observers. CCD observations are welcome to provide better coverage.

0111-18 WX Cet 9.5V-18.5V

Needs positive observations badly at quiescence.

0139+37 AR And 11.0V-17.6V

Outburst maxima are covered fairly adequately by visual observers. CCD observations are badly needed at quiescence.

0203+56A UV Per 11.7V-17.9V

Ron Zissell has been monitoring the quiescence of this star and so at last we had some positive observations at quiescence. However, recently even Ron has not been following UV Per, so CCD observations are badly needed to determine the quiescence level of this star.

0223+39 PQ And 10.1v-19V

We have _NO_ positive observations of this star in the AAVSO International Database; all the observations are fainter-thans. Positive CCD observations are badly needed.

0309+42 QY Per 14.2-(20P (GCVS))

Except for a very few observations by Ron Royer and Ron Zissell, we have no positive observations during quiescence. CCD observations are badly needed.

0324+58 AF Cam 13.4V-17.3V

In recent years, Steve O'Connor and particularly Roger Diethelm, have been monitoring the quiescence level of this star. We need more observers contributing positive observations during quiescence.

0406-15 XZ Eri 14.6p-18.7p

Another CV with no positive observations at quiescence. CCD observations are badly needed.

0418-13 AH Eri 13.5V-18.5V

Ron Royer and Steve O'Connor and, recently, Robert James, have been contributing some observations at quiescence. More positive CCD observations are badly needed.

0905+51 DI UMa 15.2V-18.0V

Visual observers have been contributing to the outburst phase of this star, and Roger Diethelm has been contributing CCD observations at quiescence, but we need observations from more CCD observers for this star.

0956+34 RU LMi 13.8-19.5P (GCVS)

Another star that Roger Diethelm has been monitoring at quiescence. We need closer coverage by more CCD observers to determine the quiescence level.

1049+30 SX LMi 13V-17.4V

Another star for which outbursts have been covered fairly well by visual observers. However, the quiescent phase needs observations badly. Recently, Ron Zissell and Aaron Price have been contributing CCD observations; we need better coverage through the participation of more observers.

1132+02 RZ Leo 11.5V-19.2V

Steve O'Connor and Aaron Price have been contributing a few CCD observations at quiescence, but this phase has mostly fainter-thans by visual observers. We need positive observations from CCD observers.

1133+03 T Leo 10.0V-15.9V

Visual observers are monitoring both the outburst and quiescence phases, and recently Roger Diethelm has been monitoring it with CCD. More positive CCD observations are needed to determine well the quiescence level of this SU UMa-type cataclysmic variable.

1147+49 BC UMa 10.9B-18.3B

Thanks to observations from Ron Zissell and recently, a few from Roger Diethelm, we have some idea of the quiescence level of this star. However, more CCD observations are very much needed to determine well the quiescence level. Zissell reported quiescence to be around 18-19 in V.

1227+14 AL Com 12.8V-20.8V

Except for a few CCD observations by Ron Zissell, the quiescence level of this very interesting star has no positive observations. CCD observations are badly needed to determine well the quiescence level. Observers are cautioned to make sure that the identification of AL Com is correct.

1251+27 GO Com 13.1-20P (GCVS)

Ron Zissell and Roger Diethelm have been monitoring this star at quiescence, and visual observers during outburst. More CCD observations are badly needed to determine the quiescence level.

1841+37 AY Lyr 12.3V-18.0V

The outburst is well monitored by visual observers and in recent years particularly Ron Zissell and Roger Diethelm have been monitoring the quiescence level. More positive CCD observations are needed for better coverage of quiescence.

1920-10 DH Aql 12.5p-18.3V

Another CV in which the outbursts are fairly well monitored by visual observers but the quiescence level has only fainter-than observations. Positive CCD observations are badly needed for this star.

1951-09 UU Aql 11.0V-17.0V

Thanks to the observations of Jan Manek, Marco Fiaschi, Ron Zissell, Gary Walker, Frank Scheder, and particularly Steve O'Connor, in recent years we have a handful of CCD observations of this star at quiescence, while the outbursts have been well monitored by visual observers. We need CCD observations to have better continuous coverage of this star at quiescence.

2106-09 VY Aqr 8.0B-17.5B

Our visual observers Robert Modic, Roland Lebert, Francois Pineau, and Michel Verdenet have been contributing a few visual observations, and recently Steve O'Connor has been contributing some CCD observations at around 16-17mag in V, but apart from these observations, the quiescence level is made up of fainter-than observations from visual observers. Positive CCD observations are badly needed for this star. VY Aqr is overdue for an outburst - we have not had an outburst since 1993! Please monitor it as closely as you can during this season, both to determine the quiescence level and to catch the next outburst.

2110+13 EF Peg 10.7V-18.5V

We have a few positive CCD observations from Ron Zissell, Roger Diethelm, and Robert James, and a few visual observations from Dick Stanton, but otherwise all of the observations are fainter-thans during quiescence. The star's rare outbursts are well monitored by visual observers. Better coverage and positive CCD observations are badly needed at quiescence.

2125-03 VZ Aqr 11.3p-17.2p

Another CV in which the outbursts are well monitored by visual observers, but except for recent CCD observations from Steve O'Connor, quiescence is marked mainly by fainter-thans from visual observers. Positive CCD observations are badly needed.

2325+43 DX And 11.0-16P (GCVS)

Another CV for which both the outbursts and quiescence are fairly well monitored by visual observers. The minimum level reported by visual observers around 14.5 is a bit brighter than those reported by our CCD observers Roger Diethelm, Robert James, and Frank Schedere. We need participation of more CCD observers. Please report the comparison stars you are using to reduce your data for this and all the other variable stars.

* * * * *

The complete paper is online at the URL below:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1996MNRAS.282.1211S&db_key=AST&high=3b4flb442615845

Sproats, L. N.; Howell, S. B.; Mason, K. O. Monthly Notices of the Royal Astronomical Society, Volume 282, Issue 4, pp. 1211-1222.

5. V1548 AQL (N AQL 01) CCD MULTI-COLOR LIGHTCURVE

Doug West (WJD) has been compiling a fantastic light curve for all AAVSO CCD observations of V1445 AQL. It covers V,R, and I observations from March to September, 2001. You can view the light curve at the URL below:

<http://www.aavso.org/ccdviews/v1548.shtml>

6. FAINT LPV COMMENTS BY J.A.M.

The stars listed below are either at or around minimum at this time and need the attention of our CCD observers. For quite a number of the stars, the charts do not have faint enough comparison stars to enable good visual estimates around minimum. However, our CCD observers may be of great help in filling the gaps with their observations.

It is very important for our CCD observers who are monitoring Mira variables to use a V filter. Because these stars are quite red, the magnitudes of observations made with unfiltered CCD are often very much brighter than the stars actually are, and as such are very misleading, especially when there are no other CCDV or visual observations available for comparison. Several of the stars listed below show these too-bright observations in their light curves. I strongly urge observers using CCDs to obtain a V filter so that their observations are compatible with visual observations and with CCDV observations from other observers.

0044-35 X Sc1 <10.6-(14.2>

This Mira variable has been in need of observations badly since 1999, when the late Danie Overbeek stopped observing it. Because we have received so few observations in the last two years it has been very difficult to determine its behavior and to predict its maxima and minima. I leave it in the hands of observers who can reach declination -35 degrees to make the observations we badly need. Presently it is fading to minimum, predicted for mid-December.

0120+20 RX Psc 9.5-(14.7)

Due to observing gaps, there are large gaps in the light curve of this star over the past several cycles, particularly around minimum. The last maximum was a bit brighter than the previous three; presently the star is fading towards minimum, predicted for the beginning of November. We have 'd' and 'e' scale preliminary charts available for monitoring this star this season.

0202+27 Z Tri 9.4-15.2

Observations are badly needed as this star slowly fades towards minimum, predicted for late October. There are 'd' and 'e' scale preliminary charts on which the sequence does not go faint enough to cover the variable at minimum. We need our CCD observers' help to provide better coverage throughout the forthcoming minimum.

0259+19 RT Ari 9.8-(15.0)

The observations of this Mira have been sporadic, with some cycles fairly well monitored around maximum, while minima have been poorly monitored. We have 'd' and 'e' scale preliminary charts, but the sequence does not go faint enough to cover the whole range of variability of this star. Presently RT Ari is fading towards minimum, predicted for the end of November. I leave this star in the hands of our CCD observers to monitor it as it fades to minimum and through minimum so we can obtain good coverage during this observing season.

0452+56 TX Cam 8.1-(15.3)

The cycles following the bright cycle of 1996, when this star reached magnitude 8.7, have been progressively fainter; the maxima of the last two cycles have been around 11.4 and 11.2, respectively. Together with the level of maximum, the level of minimum also appears to be getting fainter, however, do not have enough observations to determine what the level of minimum has been. Our thanks to our observers who have already provided some data this season as the star faded to minimum, predicted for the end of August. Please continue your efforts and monitor this star through minimum and as it slowly brightens towards maximum, predicted for mid-2002. TX Cam is one of the few Miras with a very long period, 557 days.

1626+23 DO Her 10.3-(16.0)

The minima of DO Her have been poorly monitored for several cycles, making it difficult to make good predictions of minimum dates and determine brightnesses of minimum. Minimum is predicted for mid-October. There are 'd' and 'e' scale standard charts available, but the sequence is not adequate, particularly at the fainter end. Whatever our CCD observers can do would be very much appreciated.

1708-33 RW Sco <9.6>-15.0

More observations are needed at every phase for this Mira variable,

particularly around minimum, predicted for mid-October. From the little data we have, it looks as though the amplitude of the cycles since 1996 has decreased quite a bit. However, to verify this, we need more observations. There is a 'd' scale standard chart with not a very adequate comparison star sequence that does not go faint enough, but our CCD observers may be able to make observations so we may pin down the minimum magnitude level and the amplitude.

1805+18 XZ Her 10.2-(15.5)

We do not have any positive observations during minimum for the most recent several cycles. This star is badly in need of positive observations for the minimum predicted for this month. There are 'd' and 'e' scale preliminary charts.

1814+06 AY Oph 10.4-(15.5)

There is quite a bit of scatter around maximum of the most recent cycle in 2001. The reason for this scatter may possibly be non-homogeneity of the charts being used to observe AY Oph. We have an 'e' scale preliminary chart on which the sequence does not go faint enough. Again, we ask the help of our CCD observers in monitoring this star around minimum, predicted for early October.

1850+32 RX Lyr <11.9-(15.5)>

The last two maxima of this Mira have been rather faint, 12.2 and 12.5, respectively, and there is quite a bit of scatter in the data around maximum. There are no positive observations during minimum for the past several cycles, although we have quite a number of fainter-than observations. CCD observers can really contribute during its current minimum, predicted for late October. There are 'd' and 'e' scale standard charts and an 'f' scale preliminary chart. An extra bonus in observing this star is that the Ring Nebula is very close by, in fact, for most observers it is in the same field of view (to the northwest of RX Lyr).

1913-21 Z Sgr <8.6-16.0>

The last three maxima of this star have been progressively fainter, following the normal one in 1997 in which the maximum was about 8.7, at 10.3, 10.9, and 11.0, respectively. Several minima have been in need of positive observations. Presently, the star is fading towards minimum, predicted for mid-December. There are 'b' and 'd' scale standard charts, but the comparison star sequence does not go faint enough to cover the minimum adequately. Thus, the help of CCD observers is badly needed in determining the brightness of minimum at this time.

1913-31 SW Sgr <10.0-(13.4)>

This Mira variable has been poorly monitored since the late Danie Overbeek stopped observing it in late 1999. More observations are

needed at every phase. We have a very inadequate 'd' scale standard chart that does not go faint enough to cover the star's minimum. We ask our CCD observers to do whatever is possible to provide better coverage for this star, particularly around minimum.

2104+05 RR Equ 9.2-15.6

The current maximum, at mean magnitude about 10.8, is about one magnitude fainter than the previous one. The minimum of this star has not been well monitored for several cycles. The star is fading towards minimum, predicted for early November. There is a 'd' scale preliminary chart.

2351-50 R Phe <8.0-14.1>

More observations are needed badly throughout the current cycle, particularly as the star fades towards minimum, predicted for mid-November. We have a very inadequate 'd' scale standard chart on which the comparison stars do not go faint enough to cover the star at minimum. We depend on our CCD observers to help obtain more positive observations at this time as the star fades towards minimum.

2352-65 R Tuc <9.8-15.1>

This southern variable is in dire need of more observations at all phases of variability. It has been extremely difficult to predict its dates of maxima and minima in recent years. Presently it is slowly fading towards minimum, predicted for mid-November. We have a 'd' scale standard chart that does not go faint enough to cover the variable at minimum. We bring R Tuc to the attention of our southern hemisphere observers, and ask you please to obtain more of the positive observations that are so badly needed.

Thanks to the following observers for submitting 46 CCD observations on six of the twelve LPVs listed in the last issue of CCD Views: WRX (18), JM (11), PAH (7), SFK (4), MDA (2), OFA (2), MDW (1), WGR (1). Keep the observations coming!

7. NEW WEB PAGE: MAGNITUDE ZERO POINTS

In JAAVSO Volume 26, Number 2 (1998) Ron Zissell published an article titled "Evolution of the 'Real' Visual Magnitude System". Included that article is an excellent reference and discussion for those interested in understanding zero points. The article can be viewed online at the URLs below:

Zero point discussion in HTML:

<http://www.aavso.org/committees/zeropoint.shtml>

Complete article in PDF format:

<http://www.aavso.org/journal/v26n2/zissell.pdf>

Complete scanned article via ADS:

http://adsbit.harvard.edu/cgi-bin/nph-iarticle_query?bibcode=1998JAVSO..26..151Z

8. LETTER: FREE PHOTOMETRY TEXTBOOK IN PDF FORMAT

Dr. William Romanishin, Department of Physics and Astronomy at the University of Oklahoma, has contacted us about an excellent resource he has placed online for those interested in photometry. Everyone we know who has used this textbook has raved about it. His e-mail is below:

"I am developing a textbook for doing photometry with CCDs. I use this in a course I teach for astro majors here at the University of Oklahoma. I am making the book available free of charge to anyone who wants it (in .pdf format). To find the pdf file, go to <http://observatory.ou.edu> and follow the link at the bottom of the page.

Any questions, just email me - wjr@mail.nhn.ou.edu

Bill Romanishin"

9. CCD OBSERVING TOTALS FOR AUGUST - SEPTEMBER, 2001

Total	Observer	Location
5628	SDB STARKEY, DONN RAY	IN, AUBURN
3211	COO COOK, LEWIS M.	CA, CONCORD
1807	OAR OKSANEN, ARTO	FINLAND, MUURAME
1502	PCH PULLEN, CHARLES	CA, WILTON
690	HTY HAGER, TIMOTHY	CT, NEW MILFORD
665	MMF MOILANEN, MARKO	FINLAND,
588	JM JAMES, ROBERT A.	NM, LAS CRUCES
537	GKA GRAHAM, KEITH A.	IL, MANHATTEN
501	ZRE ZISSELL, RONALD E.	MA, SOUTH HADLEY
343	HHT HYVONEN, HARRI T.	FINLAND, JYVASKYLA
297	DRG DIETHELM, ROGER	SWITZERLAND, RODERSDORF
240	WJD WEST, JERRY DOUG	KS, MULVANE
139	WGR WALKER, GARY	MA, SHERBORN
135	GOH GOLBASI, ORHAN	TURKEY, TUBITAK OBSERVAT
97	OFA O'FEARGHAIL, AENGUS	IRELAND, DUNSHAUGHLIN
97	OCN O'CONNOR, STEPHEN D.	CANADA, NORTH MONTREAL
90	PAH PRICE, AARON	MA, WATERTOWN
54	MTK MICHALIK, TOM	VA, LYNCHBURG
34	MDW MACDONALD II, WALTER J.	CANADA, OSHAWA ONT.
33	HDU HURDIS, DAVE	RI, NARRAGANSETT
31	WRX WILLIAMS, ROGER	MI, KALAMAZOO

29	PCH	PULLEN, CHARLES	CA, WILTON
19	SFK	SCHEDER, FRANK L.	MD, LEONARDTOWN
7	MDA	MORTON, ART	WA, EDMONDS
6	RR	ROYER, RONALD E.	CA, LAKEWOOD
5	FGI	FAVERO, GIANCARLO	ITALY, PADOVA
3	RIX	RICHARDS, THOMAS J.	AUSTRALIA, ELTHAM, VICTORIA
2	TOA	TOTH, ALEXANDER	HUNGARY, BUDAPEST
2	MHE	MAIER, HARALD	GERMANY, MUNICH
2	LIW	LILLER, WILLIAM	CHILE, VINA DEL MAR
1	MTM	MATTEI, MICHAEL	MA, LITTLETON
1	CRI	CASAS, RICARD	SPAIN, BARCELONA

CCDPOINTS ARE COMING...

As you can tell, CCD totals are now dominated by those who perform high speed photometry. However, some stars do not require such large volumes of observations. We did not want to make observers of those stars feel left out. So in the next issue of CCDViews we will be using a system of awarding points to CCD observers based on a large number of factors which will be kept super secret! In fact, we will give a HOA t-shirt to the first person who can correctly reproduce this formula! So keep observing and look forward to the December edition of CCDViews.

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/maillinglists.stm>

Good observing!

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

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