COMMITTEE REPORTS

CHARGE-COUPLED DEVICE (CCD)

Chair: Gary Walker
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The CCD Program has started another active year. During the period of 1 October 1998 to 31 May 1999, observations were received from six members in BVRI on all 8 standard stars, for a total of 648 measurements with a typical standard deviation of 0.03 magnitude. Feedback was provided to all observers showing their measurements in comparison to other observers'. The agreement was well within 0.1 magnitude absolute. The database in Lotus was updated to catalogue these observations and a backup copy was sent to headquarters. BVRI CCD measurements now total 4420.

The faint CV and LPV project was started at the Spring 1997 meeting. This project seeks to measure the faint portion of the light curves of CV's and LPV's which are at or beyond the limit of our visual observers. Most of these objects show only the bright sections of their light curves in the AAVSO archive. These observations are intended to be done only with a V filter, to minimize the involvement with filter wheels and transformations. It will be exciting to characterize the faint portions of these variables' light curves. In the past 8 months, 270 of these observations on 19 of the 27 variables in the program have been submitted. This brings the CV/LPV CCD(V) database to 952 observations, and the grand total of all CCD observations to 5372.

I would like to recognize and thank our top two observers so far this year: Ron Zissell, 666; and Tom Michalik, 252. In addition, I would like to recognize Keith Graham, who has been working to generate an Excel Spreadsheet for observers to use to record their data and send them electronically.

Additional accomplishments for the past six months were:

1. Encouraged participation of CCD observers
2. Updated database and corresponded with members
3. Continued the CV/LPV project
4. Generated an introductory CCD web page
5. Showed CCD compatibility with visual observations in CCD(V) experiment

Goals for the next 6 months are:

1. Continue to expand participation—both observing and contributing
2. Update database and correspond with members
3. Publish the 4th issue of *CCD Views*
4. Update the CCD web page with light curves and other information
5. Review/rewrite the Transformation Instructions—ongoing

CHART DISTRIBUTION

During the period from November 1, 1998, to June 30, 1999, AAVSO Headquarters distributed the following numbers of charts by postal mail (charts downloaded electronically are not included in these totals):

Standard Charts	613
Reversed Charts	67
Finder Charts	53
PEP Charts	126
CCD Charts	32
Total Charts mailed:	891

In addition, 10 copies of *The AAVSO Variable Star Atlas* were sold.

ECLIPSING BINARY

Chair: Marvin E. Baldwin
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This report delineates the eclipsing binary data received since the 1998 Fall meeting. This period consists of eight months, October 1998 through May 1999. More than 12,000 observations were submitted by 30 observers. These data include about 750 minima that can be directly measured from nightly observing sessions. A few additional normal times of minima will be extracted from observations made at random. Six observers submitted CCD data for eclipsing binaries.

Observers with small instruments who may feel that they are at a disadvantage doing eclipsing binary work should consider the many bright eclipsing binaries discovered when data taken by the Tycho instrument on the Hipparcos satellite were examined. David Williams lists a number of these stars in the *Eclipsing Binary Update*, No. 7, and more are written up by Roger Sinnott in the June 1999 issue of *Sky & Telescope*. Precise eclipse prediction elements are not yet available for many of these stars. An intense visual observing project on a few of these stars might result in establishing prediction elements. Most of these stars do not lend themselves to observation with amateur CCD equipment due to the difficulty of finding suitable comparison stars that can be reached within the same field. A small instrument with wide field of view would seem to be the ideal equipment for visual observation of these stars. Observers should keep in mind that the eclipses are shallow, requiring careful work, and that success cannot be expected unless a commitment can be made to observe intensely for an extended period of time.

NEW CHART

Chair: Charles E. Scovil
Stamford Observatory
39 Scofieldtown Road
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From October 30, 1998, to July 1, 1999, 632 Preliminary charts were mailed, and about 150 charts were distributed through e-mail.

Work is continuing on converting older charts to charts to the new computer-generated format, with most of the effort going to putting those charts which have already been computerized into a format that can be posted on the AAVSO website. Charts through 17 hours have been posted so far.

Several novae and supernovae have been charted.

NOVA SEARCH

Chair: Rev. Kenneth C. Beckmann
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During the first six months of the reporting year, the AAVSO Nova Search Committee has received several new inquiries and observer reports. Gary Nowak of Vermont, continues to be our most active observer, sending his reports in each month. Daniel del Valle of Puerto Rico has just recently begun sending us observations on a regular basis. John Coggins of England and Manfred Durkefälden of Germany, long-time observers of the AAVSO Nova Search Program and Committee, continue to send in their observations on a regular basis. New to our program are Chris de Villiers of South Africa and Pablo Pecorelli of Argentina. Bill Liller of Chile continues to observe the southern skies using the PROBLICOM method inspired by Ben Mayer of California, and Peter Collins continues his visual nova search program in Arizona.

We were excited to receive word of Nova Velorum 1999, discovered May 22.396 UT, although many of us in the northern hemisphere were unable to enjoy a view of it. We congratulate Peter Williams of Heathcote, New South Wales, Australia, and Alan C. Gilmore of Mount John University Observatory, New Zealand, for their discovery.

We also enjoyed hearing of the discovery of Nova Sagittarii 1999 on April 25, by Minoru Yamamoto of Okazaki, Japan. We congratulate each observer for his or her valuable contribution.

A full report of observational activity by the nova search program's observers will be published with the 1999 annual meeting report. If you or someone you know is interested in nova hunting, please contact the AAVSO Nova Search Committee chairman and we will be pleased to forward a copy of the Nova Hunter's Handbook at no charge. We encourage all observers participating in the program to continue sending their observations. Their efforts are appreciated.

PHOTOELECTRIC PHOTOMETRY

Chair: Howard J. Landis
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We are doing well, with 1,936 observations made by 17 photoelectric photometry observers October 1, 1998–May 31, 1999. The grand total in the AAVSO photoelectric photometry archive now stands at 26,032 observations since 1983.

We are working with several people who want to become photoelectric photometry observers, some who have returned to observing, and some who have asked for information. With others, I have had several e-mail exchanges, answering questions and giving advice when appropriate. Dr. Nick Stoikidis of Greece is back observing after 3 years of being inactive, and Bob Crumrine of New York is a new observer. Prospective observers who have part or all of their equipment are Larry Sumner of Virginia and Doug West of Kansas. I can now transmit via e-mail all beginner's instructional material for the new observer except finder charts.

One issue of the AAVSO Photoelectric Photometry Newsletter, Vol. 19, No. 1 (January 1999), was published by Editor Dr. John R. Percy, University of Toronto. John was prevented from publishing additional issues of the Newsletter by his duties with the University of Toronto Department of Astronomy's hosting the "Partners in Astronomy" meeting—a joint meeting/symposium of the AAVSO, Astronomical

Photoelectric Photometry Observations, October 1, 1998–March 31, 1999

Observer	*Location*	*No. Obs.*	*Observer*	*Location*	*No. Obs.*
Clark, W.	MO	46	Luedeke, K.	NM	281
Cox, L.	Canada	5	Manker, P.	GA	135
Crumrine, R.	NY	12	Smith, M.	AZ	65
Dempsey, F.	Canada	66	Sorensen, H.	Denmark	23
Dallaporta, S.	Italy	316	Stoikidis, N.	Greece	20
de Villiers, F.	South Africa	84	Thompson, R.	Canada	589
Kneipp, P.	LA	14	Williams, D.	IN	25
Jones, W.	South Africa	243	Wood, J.	CA	6
Lopata, E.	CA	6			

Society of the Pacific, and Royal Astronomical Society of Canada—the first week in July. Thank you very much, John. The Newsletter should be read by all photoelectric observers, as it is quite inspirational. To receive it, contact AAVSO Headquarters and request to be added to the mailing list.

RR LYRAE

Chair: Marvin E. Baldwin
8655 N. County Road 775E
Butlerville, IN 47223

Since the Fall 1998 meeting nine observers have submitted more than 4200 observations of RR Lyrae type stars. Approximately 230 times of maxima will be determined from these data. Your committee chairman recently completed a long term visual observing project involving 23 previously neglected RR Lyrae stars of southern declination. Updated elements resulting from this project are listed in an article found on page 10 in this Journal.

SOLAR DIVISION

Chair: Joseph Lawrence
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American Relative Sunspot Number Program

In the past six months, 95 AAVSO sunspot observers have contributed 6895 daily measures of sunspot counts. Their results have been reduced to daily mean sunspot values and transmitted to Helen Coffey at the National Geophysical Data Center each month in accordance with the Solar Division's obligation to NOAA. Through the financial support of NOAA and the commitment of our worldwide network of observers, the American Relative Sunspot Number program continues to provide the solar research community with a consistent and credible index of solar activity.

Two notable accomplishments highlight recent advances in the sunspot observing program:

• Software for the AAVSO Sunspot Database, data entry (SUNKEY), and relative sunspot number processing were developed by headquarters staff member Grant Foster. The database archives all sunspot observation submissions and provides a record of each observer's contribution to the program. This will facilitate the verification of observing milestone recognition awards as well as provide a source for statistical analyses of observer dependent results. The SUNKEY data entry program provides an efficient means for observers to record their observations and submit the results to the Division Chairman for processing. The new relative sunspot number processing software computes the simple daily mean and the observer coefficient corrected values, each with a standard deviation estimator of accuracy. Overall, the sunspot observing program has become more organized, with better record-keeping procedures and more visible accountability to the sunspot observers and the scientific community which relies upon the American Relative Sunspot Number program.

• The SPOTPLOT software utility was created to generate Stonyhurst solar disk templates for any specified day of the year. This program provides sunspot observers with a simple tool for determining individual sunspot positions on the solar disk. Previously, observers resorted to cumbersome manipulation of 8 standard templates which approximated the solar orientation throughout the year. SPOTPLOT eliminates all position transformation computations and provides a template specific to the date of observation. The program has quickly gained widespread acceptance and acclaim. The Association of Lunar and Planetary Observers (ALPO) Solar Section Coordinator Rik Hill has reviewed the program and enthusiastically recommends it to their solar observers. One British Astronomical Association (BAA) solar observer requested a copy of the program and gratefully responded, "I've been looking for something like this for ages...you might be interested to know that I'm less than 2 hours' drive from Stonyhurst College in Lancashire where Cortie invented the Stonyhurst discs more than 100 years ago. He would never have dreamed that I would one day have to cross the Atlantic to get a copy, still less that I would be able to complete the entire process in a matter of hours!"

Sudden Ionospheric Disturbance (SID) Program

The SID monitoring group has made progress in two improvement projects during the past half year.

• The AAVSO SID event database, to include all recorded events from the program's inception to the present, is progressing. To date, 7260 recorded SID events covering the period from January 1991 to the present have been entered into database files. These files are accessible on-line at the AAVSO Solar Division web page: http://www.aavso.org/committees/solar/. Miss Sarah Parry, a high school student in New York, has agreed to aid in the data entry as part of her directed study science project to investigate solar cycle connections with terrestrial phenomena. Miss Parry's effort in furthering the SID database is greatly appreciated.

• SID program Technical Coordinator Art Stokes has improved his original VLF receiver design by enhancing the selectivity, reducing the susceptibility to parasitic oscillations, and increasing the allowable amplification to detect weak signals. The gyrator 11 circuit will be published in an upcoming SID Technical Bulletin with the recommendation to adopt this latest design as the standard receiver for new VLF monitoring stations.

Since November 1998, 13 SID observers have identified a total of 470 events. SID observers continue to provide professional quality results to the National Geophysical Data Center (NGDC) for publication in the *NOAA Journal of Solar-Terrestrial Activity* and *Solar-Geophysical Data*. Monthly AAVSO SID results have been transmitted consistently to the NGDC before the 20th day of each month succeeding the collection. All SID observers are commended for their diligence in providing SID data plots and e-mail reports in a timely manner to the SID Analyst, thereby allowing the prompt delivery of results to the scientific community. Special appreciation is extended to SID Coordinator Casper Hossfield (A-05) for his monthly contributions to the SID Report and his efforts to recruit and inspire new professional-amateur members.

SUPERNOVA SEARCH

Chair: Rev. Robert O. Evans
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Australia

Again it my pleasure to report that amateur supernova hunting and observing is very much alive and flourishing.

In the first half of 1999 there have again been a series of supernovae discovered by amateurs using CCDs, by such observers as Michael Schwartz of the USA, who has a fully automatic search system, and Ron Arbour of England. These observers, and others like them, are building up substantial totals of discoveries for themselves. Schwartz has now made fifteen discoveries within a very few years.

It will not be long before a good number of other amateurs worldwide have also built fully automatic search equipment.

No visual discoveries have been made in the period since the last AAVSO meeting.

Indeed, the presence of all these amateur CCD searchers, along with the professional astronomers who do the same work, are making visual discoveries extremely difficult, because most nearby supernovae are being discovered before they are bright enough to be seen by visual observers. This is very good for science, but hard for visual observers, or for anyone who cannot afford expensive equipment.

I recently received a copy of the report on supernova observing done by the M1 group within the Madrid Astronomical Association in Spain. Jose Ripero annually produces a very impressive report on the group's excellent efforts.

Over the last two decades, amateur supernova hunting has strongly supported the efforts of professional astronomers doing research on supernovae, and thus has contributed in important ways to a monumental development in astronomy which is taking place now.

In the last eighteen months, THREE major steps have been made in cosmology.

1. Last year, two groups of professional supernova researchers published the surprising conclusion that the expansion of the universe was accelerating. This has produced something of a revolution in astronomy.

2. Prof. Jeremy Mould recently announced that his HST team found the Hubble Constant to be roughly 70 kms per second per megaparsec, based on Cepheid observations in 18 galaxies.

3. Theoreticians have now combined these with new estimates of the age of the universe at around 13.4 billion years. Involved in this is also a re-evaluation of Einstein's Cosmological Constant.

Cosmology has reached an exciting stage in the last year or so. Supernova studies have contributed to this happy situation very substantially. Amateur astronomers have played a very significant role in this development.

Finally, the most recent estimates of the rates of supernovae in various types of galaxies, based on my galaxy observations from 1980 to 1996, are soon to be published in "Astronomy and Astrophysics," in conjunction with Drs. Enrico Cappellaro and M. Turratto of the University of Padua.

TELESCOPE

Chair: Charles E. Scovil
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We have on hand for sale the following telescopes:

- 3-inch refractor, complete with tripod, alt-azimuth mount, one terrestrial and two astronomical eyepieces, and fitted wooden case for the telescope and accessories. The telescope was made by Busch, Germany, and apparently dates from about the 1920's. The objective is uncoated and the eyepieces are about an inch in diameter. The drawtube could be adapted to take 1¼- inch eyepieces. Photos of the telescope are available.

- 4-inch Goto refractor with equatorial mount and heavy tripod, formerly owned by David Rosebrugh. Photos of the telescope are available.