Committee Reports

Charge-Coupled Device (CCD)

Chair: Gary Walker
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The CCD Program completed another active year in 2002. Fortunately, the large changes that I have previously reported have settled down.

The World Wide Web continues to be a useful tool, and along with the online data submission and the online light curve generator, the tasks of collecting data, and plotting light curves continue to be done on line and updated every half hour.

Observers continue to perform variable star measurements with their CCD cameras. In many cases, we had observers performing significant photometry on many of the AAVSO program stars that were not "CCD Program Stars."

Personally, I can say that logging in my observations over the Web, and then seeing how they compare to each star's history and to the other observers from the night before, is still the highlight of my day. Many thanks to the Headquarters staff for this Web presence.

While the *BVRI* and CV/LPV Programs will continue, I encourage each of you to Observe, Submit Online, View Online and Data-mine whatever stars are of interest to you.

In the interval of October 2001 through September 2002, 1,114 observations of the stars in the *BVRI* program were logged and put on the web. As of 30 September 2002, the *BVRI* CCD measurements on the 8 LPV's now approach 8,100 measurements, going back 10 years. The faint CV and LPV project which was started at the Spring 1997 meeting continues to log *V* magnitudes. In the past fiscal year, 1,697 observations were logged, for a cumulative total exceeding 4,700. Combining both the *BVRI* and CV/LPV Programs gives a Grand Total CCD observations of nearly 12,800 observations. Soon, they will all be available on the web.

An additional 77,000 CCD observations on other stars have been submitted this past year and join the existing 76,000 observations in the AAVSO International Database. This brings the grand-grand total to approximately 166,000 total CCD observations.

I would like to recognize our *BVRI* observers: Tom Michalik, 509 observations; Ron Zissell, 228; Frank Scheder, 144; Gary Walker 111; Don Pray, 48; Doug West 25; Ladislav Smelcer, 17; Robert James and Michael Nicholas, each 3 observations; Alain Bruno, 5 observations; Keith Graham, Michael Koppelman, Harald Maier, and Angus O'Fearghail, each 1 observation.

I would also like to recognize our Faint CV/LPV observers: Ron Zissell 281 observations; Gary Walker 191; Gary Billings, 183; Don Starkey 154; Keith Graham, 149; Robert James, 135; Angus O'Fearghail 115; Roger Diethelm, 95; Christina Sanchez, 50; Frank Scheder, 40; Steve Robinson, 34; Walter MacDonald, 19;

Alain Bruno, 19; Dave Hurdis, 19; Lou Cohen, 9; Aaron Price, 5; Donald Pray, 2; Danny Scharnhorst, 2 observations.

A total of 35 observers submitted CCD Program Observations, an increase from 23 observers in my last report.

In addition, Aaron Price performed yeoman's duty by publishing electronic issues of *CCD Views*.

The main goal for the next 6 months is to organize additional campaigns like the SU UMa, WW Cet, and Z And on-line and electronic campaigns. We expect that this fast turn around will greatly expand participation and interest. In addition, we will continue to mentor future CCD observers and be a resource to observers embarking on this fascinating segment of AAVSO.

Eclipsing Binary

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

Since our annual report of 2001 some 42,200 observations of eclipsing binary stars have been reported by 147 observers. Among these were 29,600 CCD observations by 14 observers.

Leading CCD observers were Shawn Dvorak with about 9,900 observations, Gerry Samolyk with 6,600, Andy Howell with 5,500, and Gil Lubcke with 3,900. The visual observers were lead by Gerry Samolyk with about 2,400 observations, Marv Baldwin with 1,700, and Chris Stephan with 1,300. Rik Hill, Ray Berg, Mike Simonsen, Avelino Alves, David B. Williams, and Robert Hays each obtained several hundred observations. Observing from Argentina, Alexandre Amorim and Avelino Alves both obtained data on a number of badly neglected far southern eclipsing binaries.

A new on-line eclipsing binary ephemeris generator is provided by Shawn Dvorak at *http://www.rollinghillsobs.org:8000/cgi-bin/calcEBephem.pl.* The observer enters a longitude and latitude and the generator lists minima scheduled to be observable from that location.

Recent publications include *Eclipsing Binary Update #12* by editor David B. Williams, and *Observed Minima Timings of Eclipsing Binaries No. 7* by Gerry Samolyk and your committee chairman. The latter lists more than 1,000 minima timings of 50 stars by 46 observers. Both publications may be viewed on line at *www.aavso.org/observing/programs/eb/.*

New Chart

Chair: Charles E. Scovil
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In the first half of the year, we sold 192 charts by mail. Since the last report, no charts have been mailed. A few have been sent via email. The great majority of new charts are downloaded directly from the AAVSO website or are accessed via the AAVSO Second Chart CD.

Chart production continues, with concentration on making new charts for special programs. Several charts for novae and supernovae have been made. Marc Biesmans continues to make reversed charts and also upgrades and makes reverses of Standard charts.

Nova Search

Chair: Rev. Kenneth C. Beckmann
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From September 1, 2002 through August 31, 2002, we had five observers contribute nova search observations to the nova search program. Our most active observer was Gary Nowak with 2,085 observations. Manfred Durkefälden contributed the greatest number of dome searches (4,550 minutes).

You will find two new articles on the AAVSO web pages in the near future. First, the committee has contributed an extensive list of novae from 1875 to the present. The list provides observers with the year the nova was discovered, its variable star designation, position for the 2000 epoch, maximum apparent magnitude, and name of discoverer. The list is expected to serve as a resource to observers for purposes of verifying a possible nova.

We will also update a list of common areas. A paper entitled "A Spirit of Search" by K. C. Beckmann identified several common areas based on the frequency and distribution of novae along the Milky Way. This new paper, also by the same author, describes four new common areas, two in the summer Milky Way and two in the southern hemisphere that are added based on twenty years of information on novae discovered.

We congratulate all those who have discovered a nova either visually or photographically during the past year. You may find this information about discoveries and discoverers by accessing the *AAVSO Alert Notices* and *News Flashes* on AAVSO web pages.

Currently, the committee has been studying the possibility of offering some formal recognition to observers who have faithfully contributed to the AAVSO Nova Search program over a long period of time. Several observers have contributed

in excess of 5,000 observations and three observers have contributed more than 10,000, with one observer contributing nearly 20,000 observations. We thank Dr. Janet Mattei and Elizabeth Waagen of AAVSO Headquarters for their helpful input as we continue to study the need for some form of recognition.
The following observations were made in the nova search program this year.

	Observations	Dome (areas searched)
John Picket, USA	14	4 (areas)
Manfred Durkefälden, Germany	24	4550 (minutes)
Daniel del Valle, Puerto Rico	59	0
Gary Nowak, USA	2085	0
Kenneth Beckman, USA	1980	0
Total	4162	

Photoelectric Photometry

Chair: John P. Manker
10 High Country Dr., Cedar Crest, NM 87008

During the fiscal year 2001–2002, 16 observers contributed heavily to the AAVSO Photoelectric Photometry database (i.e. 3,183 observations). The grand total is 33,965.

Over the fiscal year, our observers provided data in support of the Gravity Probe-B satellite. The designated star to be observed was IM Peg, a guide star for the satellite. To this end IM Peg was observed 433 times. Lou Cox, of Canada, contributed 64% of the data for IM Peg, with 277 observations. This project will continue over the lifetime of the satellite.

Also, during the fiscal year we welcomed six new observers.

Photoelectric photometry observations October 1, 2001–September 30, 2002

Observer	Location	No. Obs.	Observer	Location	No. Obs.
Beresky, T.	MO	9	Grim, B.	UT	45
Clark, W.	MO	127	Jones, W.	South Africa	494
Cox, L.	Canada	545	Kneipp, P.	LA	27
Crumrine, R.	NY	2	Luedeke, K.	NM	580
Dallaporta, S.	Italy	58	Stoikidis, N.	Greece	294
Dempsey, F.	Canada	57	Thompson, R.	Canada	674
de Villiers, F.	South Africa	10	Wiggins, P.	UT	100
Fox, J.	Minnesota	139	Wood, J.	Canada	22

RR Lyrae

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

During the past 12 months, 28 observers collected a total of approximately 5,800 observations of 60 RR Lyrae-type stars. About 4,000 of these were CCD observations and the remaining 1,800 were visual.

Among CCD observers, Gerry Samolyk led the way with some 2,600 observations. Gil Lubcke and Mike Nicholas each made several hundred CCD observations, followed by Chris Hesseltine and Neal Simmons filling out the balance.

Your committee chairman obtained about half of the visual observations, with Ray Berg and Rik Hill each making about 200 visual observations targeting stars especially in need of more observations.

Gerry Samolyk has prepared a draft of our first monograph for RR Lyrae-type stars. The editing process is ongoing with publication targeted for Spring 2003. This first monograph will feature XZ Cyg listing some 600 times of maxima and examines the star's period behavior through nearly four decades.

Ray Berg continues publishing the *RR Lyrae Bulletin* with the release of *Bulletin #4,* keeping observers up-to-date on recent developments.

Solar

Chair: Carl E. Feehrer
9 Gleason Road, Bedford, MA 01730

As reported at earlier meetings, the Solar observing program continues to benefit from the presence of the *AAVSO Solar Bulletin* and related sunspot and SID data on the AAVSO website, and from media attention being paid to the Sun during the maximum. The program continues to attract new contributors to both of its observation activities. During the period, 90 observers have filed sunspot reports and 20 observers have filed SID reports.

American Relative Sunspot Program

During the period, 876 sunspot reports containing a total of 13,352 observations were received and processed. As shown in Figure 1 below, a larger number of reports has been received in this period than in the previous period as a result of growth in the size of the observer group.

Sudden Ionospheric Disturbances (SID) Program

One hundred ninety-nine reports based on the monitoring of seven different VLF stations were received and processed. Mike Hill, SID Analyst and Chair of the

SID group has developed new procedures for automating the reduction and reporting of flare data. His reviews of activity during the period and of the revised procedures are presented at the end of this report.

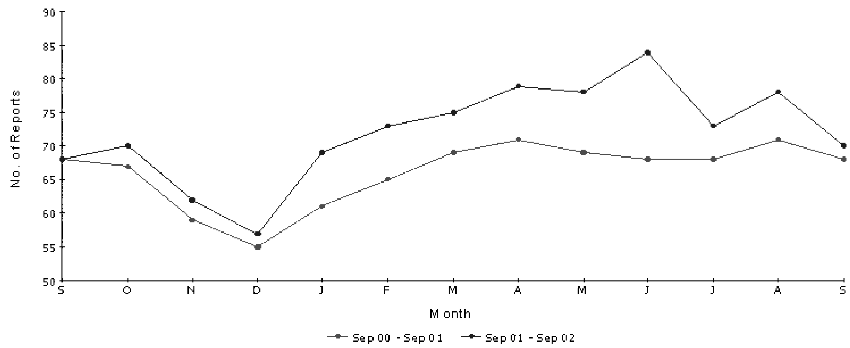

Figure 1. Number of Sunspot Observer Reports Received During Corresponding Periods.

Contributions to AAVSO's Website

The number of solar images contributed to the Solar Photo Gallery by observers became large enough last month so that it was necessary to reorganize the collection. Since the group provides good coverage of the appearance of the disc over most of the maximum, I hope at some point to put together an album of selected images that could be of value in teaching new observers the art of sunspot grouping.

Figure 2 below presents the numbers of downloads from the AAVSO Solar Committee web pages during the reporting period, and Figure 3 presents the subset of downloads associated with the *Solar Bulletin*.

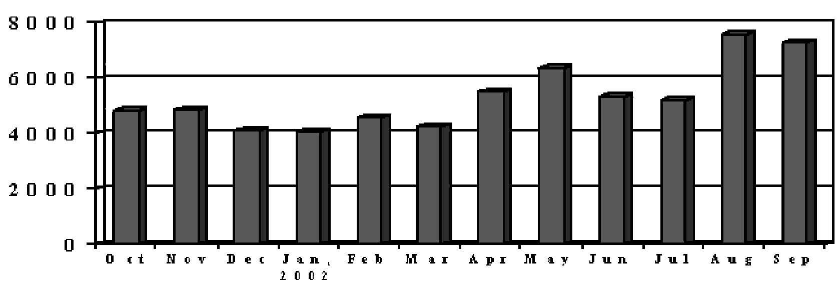

Figure 2. Solar Pages Downloaded: October 1, 2001–September 31, 2002.

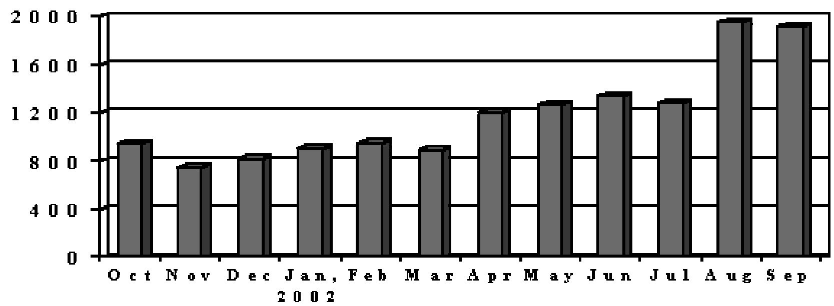

Figure 3. *Solar Bulletin* Pages Downloaded: October 1, 2001–September 31, 2002.

Acknowledgements

The successful performance of the Solar program up to this point is due to the dedication and hard work of our network of observers and the following people:

* Mike Hill, Analyst and Chairperson of the SID group, and Editor of the SID portion of the *Solar Bulletin.*
* Casper Hossfield, Editor of the monthly SID Supplement to the *Solar Bulletin*.
* Kate Davis, the AAVSO's website maintainer.
* Arthur Ritchie, a volunteer at the AAVSO who assists in the preparation of the monthly sunspot data.

It has been a pleasure to work with them. Thank you all.

Summary of SID Group Activity for the Period October 2001 to September 2002

Chair: Mike Hill

The SID Program has seen a lot of activity over the past year. As the sun passed from solar maximum and started its decrease in sunspot activity there have been periods of intense flare activity, with some of the most active months being this past July and August, fully one year past solar max. In August there were 193 correlated SID events recorded by observers! (The average over the past year has been around 60.) We have an average of 15 observers reporting each month. Most observers are monitoring one station, although some monitor two or three. From these observers, a total of 199 reports have been submitted over the last year, resulting in a total of 1,021 solar flare-related events being recorded. I wish to thank all these observers for their dedication to this activity.

An important change to the analysis method has been in effect since June of this year. I have written a computer program that now does all the observer-to-observer event correlations. This results in a more accurate determination of event times and importance levels. When the SID program began, the analysis was done by lining up each observer's daily strip chart plots and looking for correlated events among observers. By the time I took over, computers were being used to replace the old paper chart recorders, and observers were submitting data files that listed the events they recorded. At this time, I began doing the analysis using a spreadsheet into which I entered the observer's data and then compared the events in a fashion similar to the paper strip chart comparisons. I also started using the recorded flare events of the GOES-8 spacecraft as a baseline for this comparison. The new program I have written processes the observer reports directly without having to copy the events into a spreadsheet.

The correlation process is a three-step process. The program first scans all observer files and generates a list of any events that are reported by more than one observer within ±5 minutes. An average time and importance rating is computed based on all correlations. If GOES-8 flare data are available, the program then compares any remaining uncorrelated events to actual flare events and records any SID event that is within ±15 minutes of an actual flare. The program tracks the quality of each observer based on the ratio of the number of correlated events to total events submitted. The final stage of correlation is based on this quality rating. If an observer has a high quality rating, then all uncorrelated events for that observer are added to the correlation list. The program then generates all the required reports for submission to the AAVSO and the National Geophysical Data Center (NGDC), as well as an observer summary that lists uncorrelated events and the observer's quality rating based on the latest data submission. Extensive testing has been done to assure that the correlation mechanism is accurate and that the results produced match the results produced by the old manual analysis. In conjunction with this program, I have also produced a SID Analysis User Guide that describes in detail the method I follow to perform the monthly SID analysis and report generation based on the use of this new program. This will be kept on file at the AAVSO in case I no longer am able to perform the duties of SID Analyst.

Supernova Search

Chair: Rev. Robert O. Evans
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Again it is a pleasure to report that amateur astronomers continue to make substantial contributions to research concerning supernovae. All of the brightest supernovae which have been found within the last twelve months have been found by amateurs. About thirty percent of all discoveries have been made by amateurs, or in professional-amateur projects. Since the last AAVSO meeting, only one of these was found visually, although in several other cases the supernova was not discovered until it was bright enough to have been found visually, if anyone had been looking in the right place. So, visual searching is by no means a lost cause.

In the overall picture, supernova studies continue to provide insights of profound importance in forming our present understanding of cosmology. In the coming years, the new and more powerful camera recently installed on the Hubble Space Telescope will push these frontiers even further, as will also other specialized telescopes which are still in the planning stage.

Those especially interested in the present state of all aspects of our knowledge about supernovae should seek to attend Colloquium 192, to be held from April 22 to 26, 2003, in Valencia, Spain. A strong contingent of leading professional astronomers who specialize in this field will be present on that occasion. If I can find sufficient financial help somewhere, I may be able to report on this event to the next AAVSO meeting.

I must express my thanks again to Dr. Janet Mattei and to the AAVSO for their continued support for visual supernova hunting, in the form of the Supernova Award (formerly awarded as the Nova Award). The Award is an attractive way of highlighting the value of this kind of observing.

Telescope

Chair: Charles E. Scovil
Stamford Observatory, 39 Scofieldtown Road, Stamford, CT 06903

The 8-inch Dynamax Schmidt-Cassegrain and accessories have been sold. There are at present no telescopes for sale.