Annual Report of the Director for the Fiscal Year 2004–2005

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This is a marvelous time to be part of the AAVSO. We are making progress on a number of different fronts, and the astronomical community as a whole is taking variable-star astronomy seriously with many new surveys. Below are a few highlights of the past year:

- Selection and hiring of a new Director.
- Completion of the AAVSO International Database data validation project.
- Addition of Wayne Lowder's 94,946 previously-unreported observations to the International Database.
- Creation of four Variable Star of the Season presentations.
- Response to 2,846 requests for AAVSO data.
- Chart team prolific in production of excellent new and revised charts.
- Progress on the automated chart plotter.
- Comparison star database team making excellent progress in creating database of all AAVSO comparison stars.
- Held third High-Energy Astrophysics Workshop for Amateur Astronomers.
- Held second annual AAVSO Symposium.
- Started the electronic *JAAVSO*.
- Initiated many observing campaigns.
- Awarded the first Janet A. Mattei Research Fellowship.
- Moved the membership database over to MYSQL.

While the Director gives this report, the vast majority of the progress in the organization would not be possible without the dedicated staff and volunteers. Whenever you run across one of these people, be sure to thank them for their tireless effort on behalf of the AAVSO.

1. Hiring of the new director

Soon after the passing of our previous Director, Janet Mattei, the Council initiated a search in Spring 2004 for a new Director. The position was advertised on the AAVSO website in April, the AAS Job Register in May, and through word of mouth to professionals who have expressed interest in the organization in the past. A search committee composed of a mix of professionals and amateurs, including past Presidents and Council members, narrowed the applicants to a reduced list. The candidates on the reduced list were brought to St. Louis for interviews in August 2004.

Based on those interviews, a short list of four applicants was selected, and brought to AAVSO Headquarters in the Fall for staff interviews. Each applicant was able to talk to every staff member, and after a day of meetings with an applicant, the staff gave a short report to the search committee.

The Council then voted in late October for their ranked choices. Offers were made, and a new Director hired in January 2005, starting employment on March 1, taking over from Interim Director Elizabeth O. Waagen.

Significant time was involved in the selection process, and the committee and Council should be commended for their long hours and deliberations. While no one can replace Janet in our hearts and minds, her framework built over the past decades provides an excellent platform for the future of the organization.

2. Data management and data processing

a. Digitization and processing of current data

Increasingly more observations are submitted electronically through the website and are automatically pipelined into online Quick Look/Light Curve Generator files every ten minutes. About 76% of all submitted observations are coming through WEBOBS, 18% through email (and processed by programs written by Aaron Price), and 6% through the traditional paper submission and Headquarters digitization.

We finished the processing of Wayne Lowder's backlog of observations, given to us by his son after Wayne's death. These 94,946 observations, digitized by Michael Saladyga, make an invaluable addition to the AAVSO International Database, extending the light curves of a great many small- amplitude variables by a number of years.

Several other large observational databases have been digitized. The eclipsing binary and RR Lyr observations from 1966 through 1975 that only existed on paper forms were entered by a Margaret Mayall Assistant, Yelena Synkova, and will be formatted and added to the International Database shortly. The photoelectric photometry (PEP) datasets submitted since the resignation of PEP committee chair Phillip Manker have been collected by Headquarters. These have now been entered by Sara Beck and will be processed in the coming months and added to the PEP data archive, which from now on will be maintained by Headquarters instead of

by the committee chair. Finally, the 70,000 observations by A. W. Roberts (South Africa) are being entered by volunteers and will be sent to Headquarters in the next fiscal year for validation.

b. Computer system and networking

There have been some significant technological changes in the infrastructure of the AAVSO this year. The first has been a gradual replacement of older workstations. Many staff workstations were more than five years old and had heavy use. Five staff members and the Director received new workstations, a laptop was purchased for the Director, and two workstations were acquired for use by other staff members in the coming months. All of the new workstations run the Mac OS X operating system (except one that is LINUX-based). This is a general migration to Macintosh computers to decrease IT staff support overhead and to increase the use of open source software and standards. We have made the decision to use Adobe INDESIGN for all in-house publications, and a Mac copy has been purchased and a Mac Mini allocated to the *Journal* publication. Much of the new database interfacing is in JAVA, with bits and pieces in PERL and PHP.

A contract was negotiated and signed to provide much faster 1.5Mbps T1 Internet access at lower cost than our existing line provided. A lightening strike that occurred during an intense mid-Summer thunderstorm caused the loss of four network cards in computers, damaged the main telephone system, and burned out the T1 router. This caused a telephone downtime of a few days and an Internet downtime of about five days. Aaron Price moved the AAVSO web server off-site to provide some communication to the outside world. No data were lost during the outages.

A significant amount of software has been developed and released this year. MAGPLOT 2.0, released the first week in October, is a light curve-plotting tool that also does basic statistical analysis. WINWWZ, released in December, is a WINDOWS program for wavelet analysis of variable star data. PHASEPLOT 1.0, released in March, is a WINDOWS program for plotting phase diagrams and performing associated statistics. PCOBS 2.1 was released with minor changes and bug fixes. MAGPLOT, PHASPLOT, and PCOBS were written by Len Abbey, and WINWWZ was written by Geir Klingenberg based on an algorithm developed by Grant Foster. An airmass and scintillation calculator was added to the website.

The AAVSO also entered into an agreement with CBABelgium.com to offer a free copy of the PERANSO period analysis software to all AAVSO members. Prior to the announcement in February, PERANSO added the CLEANEST algorithm to its suite of data analysis tools. CLEANEST was developed by Grant Foster at the AAVSO. The VISUAL BASIC source code for the algorithm has been publicly released via the AAVSO website.

c. The membership database and MYSQL

Erin Snyder, another Margaret Mayall Assistant for the Summer of 2005, worked

with Aaron Price to convert the membership database from APPROACH (commercial software that is no longer sold or supported) to MYSQL, a full relational database that is publicly supported. Over time, use of APPROACH became awkward and complicated as our membership database management needs became more demanding. Erin wrote JAVA graphical interface routines to provide the same functionality as APPROACH, along with extensions to improve the speed and usefulness of the database. The resultant program is called SOLO. This type of JAVA/MYSQL combination will be used in early 2006 to convert the existing, flat-ASCII, International Database into a full relational database. Staff members are taking JAVA courses so that they can maintain SOLO and similar interfaces in the future.

3. Internet presence and the AAVSO website

AAVSO website usage is high with a general increasing trend in activity. There was a significant dip in December that seems to be consistent with previous years; it is proving to be a real "Holiday Hiatus." The most popular pages on the whole site are the same as in past reports: the Light Curve Generator, the Chart Search Engine, and the Quick Look file. These three programs alone account for 60% of the top ten most popular pages on the site. The amount of data transferred per day has increased from 324 MB (last year) to 377 MB (this year), which averages to about one page downloaded every fifteen seconds. Approximately 270,603 charts and 189,377 light curves were downloaded over the past year.

There were several significant additions to the website this year. There has been an increasing focus on observing campaigns. Specialty observing pages were created for about a dozen objects, most in response to requests from professionals. An "Observing Campaigns at a Glance" page was added as a tool to help observers plan their activities. The electronic *eJAAVSO* was begun, with both new papers and archived volumes added for easy access.

AAVSO-Interest pages were enhanced over the last year with the addition of a "What's new at HQ" section which includes short staff biographies and pictures as well as directions, a tour of the building, and news from headquarters. A special page was created to introduce the new Director. The Fall 2004 meeting was archived including video from the Janet A. Mattei memorial, paper presentations, and more. PowerPoint presentations from the 94th Spring Meeting and 3rd High-Energy Astrophysics Workshop for Amateur Astronomers were added. "The Online Book Auction" was new this year and seemed to be more successful than the previous paper-only auctions. The popular online feature "Variable Star of the Season" continues to see a lot of web traffic and is in the top ten most downloaded pages category.

A major website addition in the last six months has been the "Internet Relay Chat Server." This software allows the AAVSO to host chat sessions among its members and observers. These chats provide real-time interaction between members and observers, important for campaigns and mentoring activities. A guest interview

is often held during the Thursday chats, with more than twenty people typically on-line to ask questions. We also purchased a high quality digital video camera, with which we are recording workshops and paper sessions, placing the video on our website. Many programming changes are being made to the website, improving ease of maintenance without changing functionality.

Some useful publications have been added to the website. Doug West has written the first Infrared Photometry Program progress report, highlighting observations of η Aql. Elizabeth Waagen has written an article on what happens to observations after they have been submitted to the AAVSO. A feature showing labeled pictures from the 1966 AAVSO meeting was added. New feature articles were written, highlighting our many volunteers and Gamze Menali's trip to Istanbul to represent the AAVSO.

Several new fund-raising links are now on the website home page. Paul Norris, a long-time member, donated panes of Hubble/HST stamps. An agreement was reached with Amazon, where any sales made by clicking on our front-page link result in a rebate to the AAVSO. We have announced a "Flying Star" program to pay for staff domestic and international travel.

4. Requests for AAVSO data

We have responded to about 2,846 requests (only 326 were manually filled) for AAVSO data and information from astronomers, observers, educators, and students. We responded to about 1,829 requests in 2004, and 536 requests in 2003. Some of this increase is due to the increasing availability of data online for automatic download, but some is also due to the fact that online requests must be made one star at a time, while an email sent to Headquarters (and that would be counted as one request) may contain a request for data on several stars.

We had a long observing campaign on U Gem this past winter in support of target-of-opportunity observations with RXTE for J. Cannizzo (NASA Goddard Space Flight Center). Cannizzo requested immediate notification of the outburst of U Gem in order to trigger the satellites. Our observers monitored U Gem closely beginning in December through February (when the outburst finally occurred). While RXTE was not able to observe this outburst, our observers' dedicated efforts provided Cannizzo with an outstanding visual and CCD light curve of U Gem to use in his research. P. Szkody (University of Washington) requested that AAVSO observers monitor the SDSS cataclysmic variables J161033, J220511, and J013132. HST UV observations were planned with the ACS instrument, and the primary scheduling constraint was that these stars could not be in outburst within twenty-four hours of the expected HST observation. AAVSO observers were able to confirm quiescence for safe observations. Now that Spitzer is operational, several requests have been received for simultaneous observations of targets while the IR observations were to be made. Examples are the Blazar 4C 29.45 for G. Spear (Sonoma State University) and Var Her 04 and AS 325 for S. Howell (National

Optical Astronomy Observatory). In addition, a significant number of astronomers are obtaining the data and information they need from materials on our website such as our News Flashes, Light-Curve Generator, and Quick-Look files. Most of our data requests come through the web.

5. Summary of observations

5.1 Annual observations

This year we received 955,302 visual, photoelectric, and CCD observations from 740 observers worldwide (Figure 1). These totals include 389,297 observations from 264 observers in 43 states and territories of the United States, and 566,005 observations from 476 observers in 42 countries. We continued to receive increasing numbers of observations from observers in the southern hemisphere and from observers with CCDs.

The total number of observations since 1911 in the AAVSO International Database now stands at 12,704,102.

We passed two milestones this year: the 12 millionth and 12.5 millionth observations contributed to the AAVSO International Database! Observation 12 million was contributed by Richard Huziak, Saskatoon, Saskatchewan, Canada, with his observation of 0056+37C NV And on JD 2453323.75860 (2004 November 14.25860 UT) at magnitude 14.393 CCDV. Observation 12.5 million was contributed by Vance Petriew of Regina, Saskatchewan, Canada, with his observation of 2138+43F NSV 25754 on JD 2453622.63059 (2005 September 9.13059 UT) at magnitude 11.237 CCDV. Figure 2 shows the half-millionth observations submitted to the AAVSO.

Our top four observers for this fiscal year were Richard Huziak (Canada) with 38,450 (mostly CCD) observations, Robert James (USA) with 46,352 (all CCD), Vance Petriew (Canada) with 60,561 (nearly all CCD), and Wayne Lowder (USA) with 94,946 (all visual; the final eleven years of his observations). Table 1 lists the number of observers and the total observational contribution from each country during this fiscal year. Table 2 gives the same information for each state or territory in the United States. Table 3 is an alphabetical list of observers, giving each person's AAVSO observer initials, location, and annual totals of observations. Table 4 lists the numbers of observers, each of whom made 1 to 999 observations; 1,000 to 9,999 observations (in increments of 1,000); and 10,000 or more observations this year. Table 4 also lists for each category the total number of observations and the percentage of all observations the category represents. Figures 3, 4, and 5 show schematic representations of the information in Table 4.

We received 1,674 observations from 17 photoelectric observers. We received 465,421 CCD observations from 196 observers. These include *BVRI* observations of CCD program stars and the CCD observations of other types of stars, particularly faint cataclysmic and long period variables. We received 35,105 eclipsing binary and RR Lyrae star observations from 29 current observers (Wayne Lowder's eclipsing

binary and RR Lyrae star observations are not included in this number). Marvin Baldwin, chair of the AAVSO Eclipsing Binary and RR Lyrae Committees, together with committees member Gerry Samolyk, reduces and archives the observations for the determination of times of minima and maxima, respectively. We received 669 supernova search observations from three observers. These observations, which are not included in the annual totals, are archived at AAVSO Headquarters. Rev. Robert Evans, chair of the AAVSO Supernova Search Committee, continues to provide vital guidance to the observers. We received 3,356 nova search observations and 62.17 hours of dome searches from four observers. These observations are not included in the annual totals. Rev. Kenneth Beckmann, chair of the AAVSO Nova Search Committee, compiles these observations and provides valuable guidance to observers.

My most sincere thanks go to all our observers for their tireless efforts, dedication, and vital astronomical contributions to the AAVSO International Database. My sincere thanks also go to our data processing and archiving staff—Elizabeth Waagen, Michael Saladyga, Aaron Price and Katherine Davis (web and email interfaces and support), and Gloria Ortiz Cruz (data digitization).

5.2 International cooperation

We acknowledge with appreciation the observations sent to the AAVSO by members of the following variable star associations, either individually or as a group, for inclusion in the AAVSO International Database for dissemination to the astronomical community worldwide:

a. Agrupacion Astronomica de Sabadell (Spain)
b. Asociacion de Variabilistas de Espagne (Spain)
c. Association of Variable Star Observers "Pleione" (Russia)
d. Association Française des Observateurs d'Étoiles Variables (France)
e. Astronomical Society of Southern Africa, Variable Star Section
f. Astronomisk Selskab (Scandinavia)
g. Astronomischer Jugendclub (Austria)
h. Brazilian Observational Network REA
i. British Astronomical Association, Variable Star Section
j. Bundesdeutsche Arbeitsgemeinschaft für VerSnderliche Sterne e.V. (BAV) (Germany)
k. Israeli Astronomical Association, Variable Star Section
l. Koninklijke Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands)
m. Liga Ibero-Americana de Astronomia (South America)
n. Madrid Astronomical Association M1 (Spain)
o. Magyar Csillagàszati Egyesület, Valtózocsillag Szakcsoport (Hungary)
p. Norwegian Astronomical Society, Variable Star Section
q. Royal Astronomical Society of Canada

r. Royal Astronomical Society of New Zealand, Variable Star Section
s. Svensk Amator Astronomisk Förening, Variabelsektionen (Sweden)
t. Ukraine Astronomical Group, Variable Star Section
u. Unione Astrofili Italiani (Italy)
v. URSA Astronomical Association, Variable Star Section (Finland)
w. Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium)

6. Special projects

a. *AAVSO Monographs*

Last year it was decided to discontinue the *AAVSO Monograph* series, once those monographs in preparation were published, because of the imminent availability of the data online with the validation project. There are three monographs still in preparation. We plan to publish them this summer and complete the series.

We expect the publication of the *Observed Minima Timings of Eclipsing Binaries* and *Observed Maxima Timings of RR Lyrae Stars* series to continue. The next in the *Eclipsing Binary* series (number 10) is nearly ready for submission.

b. Validation of AAVSO International Database

The database validation project funded by NASA has been completed on time and on budget. This covers most of the AAVSO program stars (except for Orion variables and NSV/CSV candidates) through 2001. We continue to validate more recent data, with Kerriann Malatesta, Gamze Menali, and Sara Beck performing the majority of the effort. We expect to submit a NASA unsolicited proposal in late 2005 to complete the validation through the current date, include stars excluded from the first phase, and to improve the software used in validation. Kerri is principal author on a paper for the *JAAVSO* on the validation project.

c. Charts

The Chart Team has been very busy this year under the leadership of Team Leader Mike Simonsen and Headquarters Coordinator Aaron Price. Over the past three years, 2,000 charts for more than 400 stars have been created (about 40% of all AAVSO variable star charts). The chart team is currently addressing chart errors reported through the Chart Error Tracking Tool (CHET) interface. The chart team, the comparison star database working group, and representatives of HQ are working together to develop the Automated Chart Plotter (ACP). A beta version using IDL was demonstrated at the Las Cruces AAVSO meeting. After extensive deliberation, it was decided to hire ClockWork Active Media Systems to produce a PERL/PHP equivalent to the IDL program. This relieves us from using proprietary software and produces a program that more staff members are able to modify and maintain. The chart-plotting program should be available for testing within a few months. Initial discussions regarding updating the Royal Astronomical Society of New Zealand's southern charts have begun.

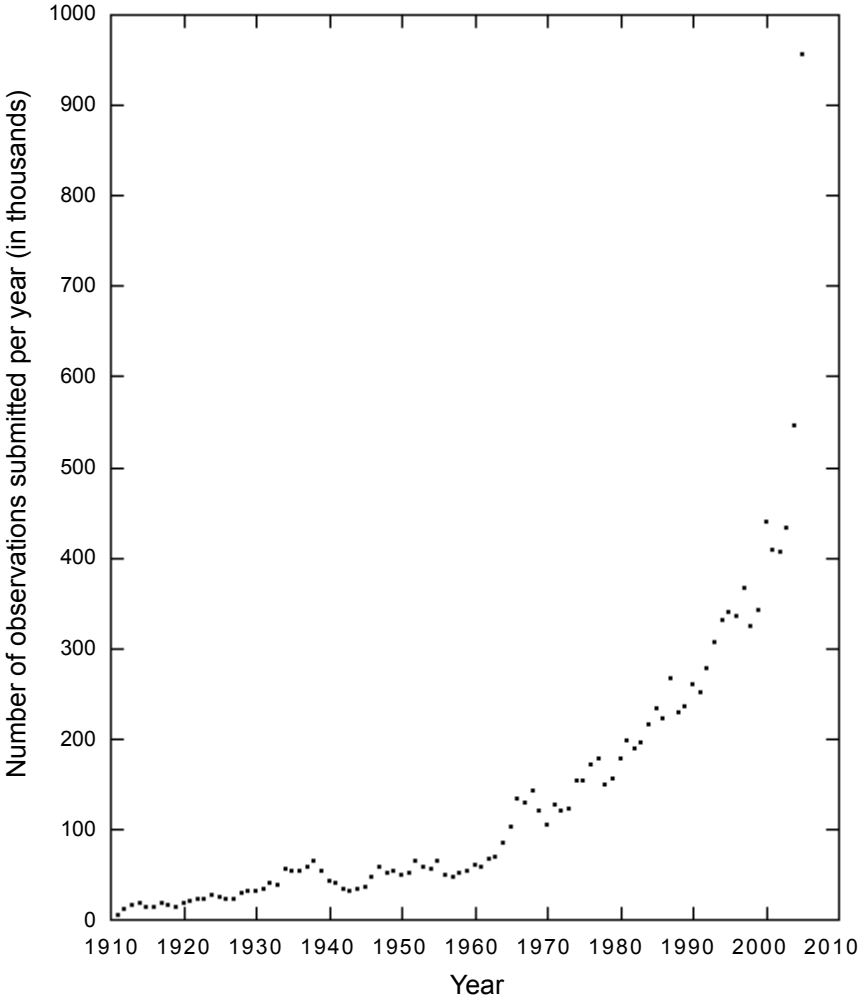


Figure 1. Number of observations submitted each year to the AAVSO International Database since its founding in 1911.

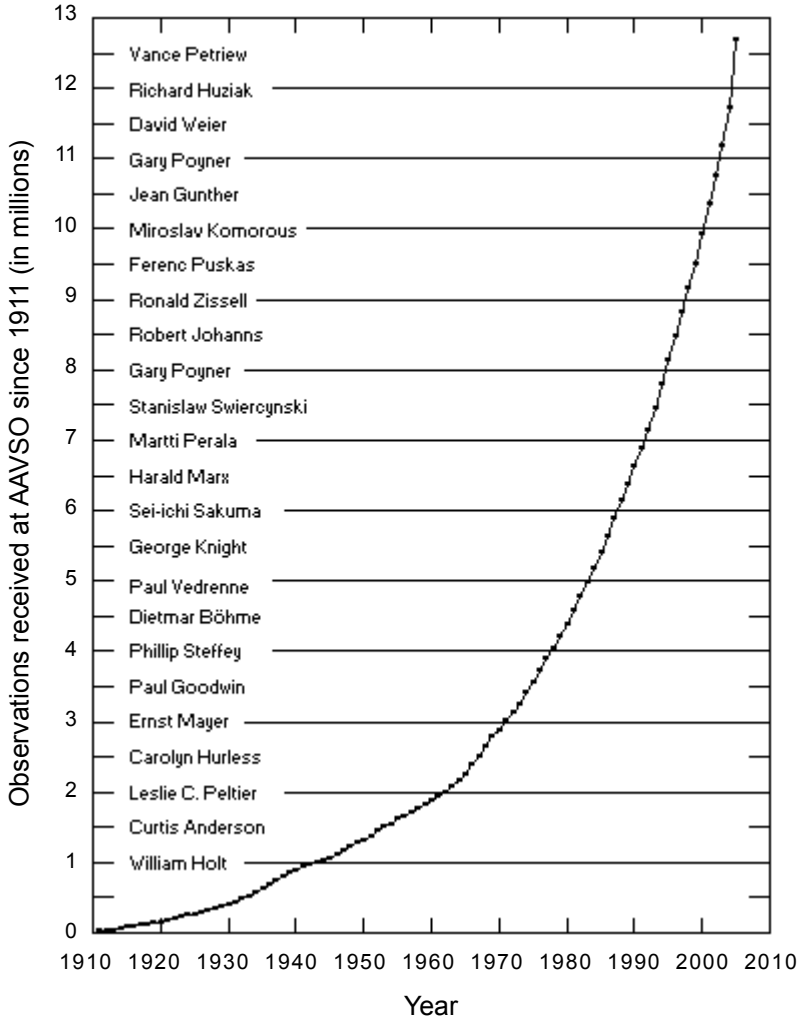
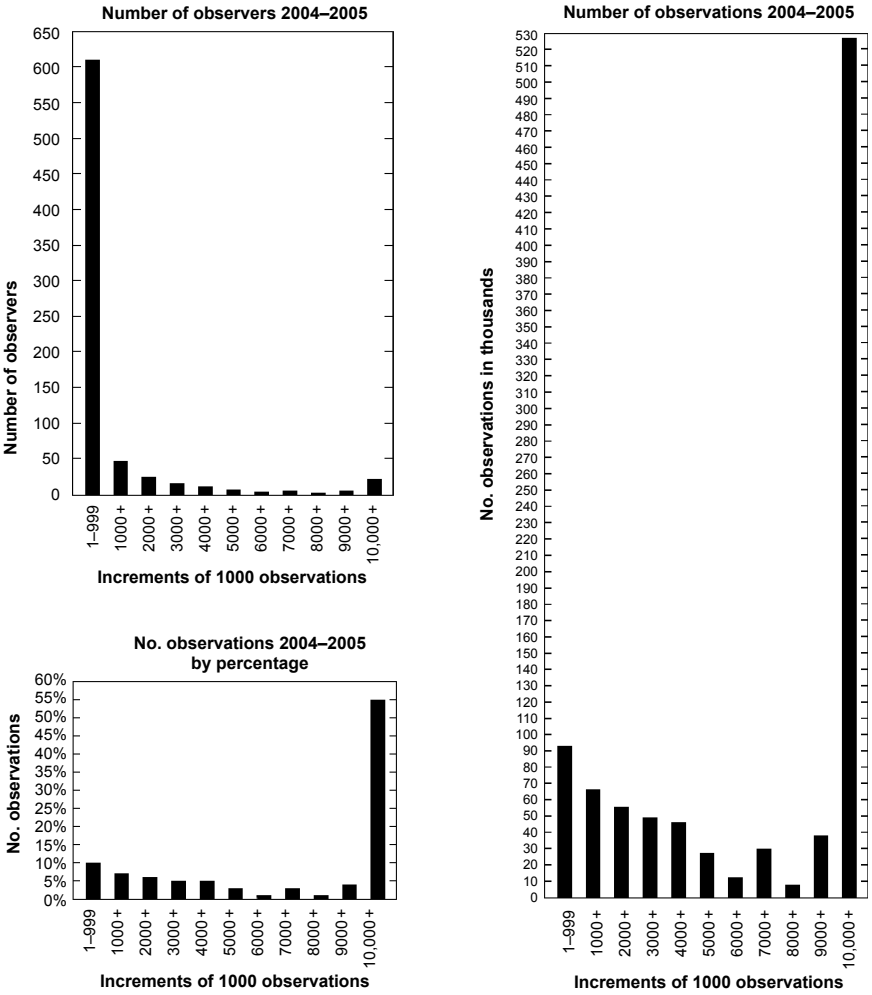


Figure 2. "Megasteps" of the AAVSO—the year in which each half-millionth observation was contributed to the AAVSO International Database, and the name of the observer credited with making the observation.



Figures 3, 4, and 5. These figures represent the information given in Table 4. Figure 3(top left) shows the number of observers, each of whom contributed 1–999; 1,000–9,999 (in increments of 1000), and 10,000 or more observations in fiscal 2004–2005. Figure 4 (right) shows, for each increment of 1,000 observations, the total number of observations contributed by the corresponding number of observers shown in Figure 3. Figure 5 (bottom left) shows, for each increment of 1,000 observations, the number of observations given in Figure 4, represented as a percentage of the total number of observations contributed to the AAVSO in fiscal 2004–2005.

d. Comparison star database (COMPDB)

The COMPDB project was initiated in the summer of 2003 to create a database of comparison stars on AAVSO charts in preparation for automatic chart making and more efficient comparison star sequence changes.

The team, under the leadership of Team Leader Vance Petriew and Headquarters Coordinator Aaron Price, has made great progress during the past year in documenting all the active AAVSO charts found on the website (phase 1 of the project). The Comp Star Database Working Group is nearing the end of phase I, documenting over 70,614 comparison stars on over 4,128 charts. Less than 300 charts remain to be done. Planning for phase II has begun. Phase II will place the comparison stars into a relational database and perform research to improve the photometric values of each star. A team of observers will be trained to determine sequences for fields that have no available or published photometry.

As an ancillary task to the COMPDB, Vance Petriew wrote a white paper on how we should identify (or name) variable stars in the future, getting us away from the Harvard Designation system. The new Universal Identifier (UID) concept has been incorporated into a new software product, the Variable Star Index (VSX) program by Chris Watson, that will be available to our membership in a few months. A preliminary version is on the AAVSO website for testing by a small set of external collaborators.

e. AAVSO International High-Energy Network (HEN)

We are happy to report that the High-Energy Network has received a grant of $25,000 from the Curry Foundation. Part of the grant was used to purchase red CCD filters for use in GRB follow up and blazar observations. A large fraction of the remainder is being used to finance the automated chart program.

The Third High-Energy Astrophysics Workshop for Amateur Astronomers was organized and held March 22–24. Also participating were Sonoma State University, NASA's Marshall Space Flight Center, and New Mexico State University. Grants from Sonoma and MSFC were used to finance the Workshop.

A data request to monitor LS Peg during XMM-Newton observations was made by D. Baskill (University of Leicester). C. Mauche (Lawrence Livermore National Laboratory) requested monitoring assistance for his multiwavelength (gamma-ray to radio) campaign of AE Aqr, a unique cataclysmic variable, as well as for his program with XMM-Newton to study the CVs HT Cas, Z Cha, and OY Car, in which notification of outburst was requested. A successful CCD campaign was conducted on BL Lac.

Several GRB afterglows were detected by network members this year. More localizations are now being made available thanks to the successful launch of the Swift satellite. GRB050922C ($z=2.198$) was observed by B. Gary and D. Durig. Durig also observed GRB050908 ($z=3.35$); B. Monard observed GRB050801; C. Jacques observed GRB050730. Several other members submitted negative observation reports on various faint bursts. The AAVSO Solar program's SID group continues to monitor for events related to GRBs.

f. AAVSO archive projects

Since October 2004, Michael Saladyga has collected Janet Mattei's material for the AAVSO archive collections (correspondence, administrative, and organizational), and has begun preliminary arranging of this material (about fifty file storage boxes). The preliminary stage of this archiving will take about six months, with final arranging and cataloguing taking another six months.

About 34% of special collections material and some other AAVSO material are yet to be processed and catalogued. Materials remaining in both categories are not of high priority. Follow-up photocopying of deteriorated papers and photographing/scanning of selected items remain to be done.

7. Headquarters staff

The AAVSO continued to be fortunate in the strength, capability, and commitment of its Headquarters staff as morale and productivity remained high throughout this year of significant transition.

Our present Headquarters staff consists of the following: Director Arne Henden (as of 3/1/05); Interim Director (through 2/28/05)/Senior Technical Assistant (as of 3/1/05)/Associate Editor *JAAVSO* Elizabeth Waagen; Staff astronomer/Assistant Editor *JAAVSO* Matthew Templeton; Technical Assistants Kerriann Malatesta, Michael Saladyga (also Production Editor JAAVSO), and Gamze Menali; Administrative Assistant/Membership Services Travis Searle; Technical Assistant, Web Katherine Davis; Technical Assistant, technology, and Unix Systems Administrator Aaron Price; 7-month full-time Technical Assistant Sara Beck; part-time Data Entry Technicians Barbara Silva (on unpaid sick leave since 7/2003) and Gloria Ortiz-Cruz; and Headquarters Volunteers Carl Feehrer, Arthur Ritchie, and Louis Cohen (through his role as AAVSO Treasurer).

In addition, the following persons are being contracted: Rebecca Turner (Pellock), Technical Assistant for meeting planning, special request processing, and data validation project management; Lenny Abbey, programming, mostly in VISUAL BASIC; and Jane Caton, accounting.

8. Membership

At the 94th Spring Meeting in Las Cruces, New Mexico, 45 new members were elected, one of whom joined as a Sustaining member. At the 94th Annual Meeting in Newton, Massachusetts, 54 new members were elected, one of whom joined as a Sustaining member. Thus, we elected 99 new members during the year, similar to previous years. The list of new members follows the Minutes in each issue of *JAAVSO*.

At the end of fiscal year 2004–2005, we had 1,151 members, with 817 in the United States and 334 members in 45 other countries.

The Annual dues were raised from $60 to $70 for fiscal year 2006, with

Sustaining dues correspondingly raised from $120 to $140. This was our second step increase to bring dues in-line with the membership benefits.

9. Grants

We have been awarded the following grants this year:

NASA/Swift: a grant for the Swift Joint Afterglow Network (JANET) that doubles the number of sites to ten and provides a postdoctoral equivalent for mentoring the network. This network consists of AAVSO- sponsored CCD observers around the world who search for and monitor optical afterglows from gamma- ray bursts.

NASA/Swift Education and Public Outreach, administered through Marshall Space Flight Center: a grant for the Third High-Energy Astrophysics Workshop for Amateur Astronomers (HEA3).

NASA/GLAST and XMM Education and Public Outreach, through Sonoma College: a grant for the observations of polars and blazars.

NASA/GLAST, through Sonoma State University: a grant for HEA3.

Curry Foundation: a grant to support/expand High-Energy activities.

NASA/Swift Cycle 2: a consulting award for the Ultraviolet/Optical Telescope (UVOT) calibration effort.

American Institute of Physics: travel grant for an interview with Dorrit Hoffleit in New Haven, Connecticut.

Also, two American Astronomical Society Small Research Grants were awarded to AAVSO personnel: Arne Henden for testing commercial CCD cameras, and Matthew Templeton for page charges. Both of these are to the individuals and not through the AAVSO.

Several other grant applications have been submitted, but with no action as of the date of this report.

10. Staff research

Arne Henden continued his monitoring studies of new SDSS cataclysmic variables. So far, he has accumulated some 200 nights of data on over 100 individual stars. The first publication from this study should be submitted shortly. He also acquired time series data in support of papers on Var Her 04, ASAS J002512, and Var Vul 05. Arne was also able to calibrate several GRB fields, reduce IM Peg data, and initiate campaigns on TU Cas and V2291 Oph. Arne is finishing his spectroscopic and photometric survey of the open cluster NGC 7790. Work on his textbook, *CCD Photometry*, progresses slowly.

Matthew Templeton's main focus this year has been in preparing long-pending articles for publication. His large paper on the period changes in Mira variables, a project started two years ago in collaboration with Janet Mattei and completed with Lee Anne Willson, was finally published in the *Astronomical Journal*. A detailed paper on a new WZ Sge star, ASAS J0025+1217, was accepted by *Publications of the Astronomical Society of the Pacific*. He is working with S. Howell (National Optical Astronomy Observatory) on reducing photometry of stars in the open cluster NGC 2301. A collaboration with Los Alamos National Laboratory has been re-established to continue numerical simulations of stellar evolution and pulsation. Matt has also been working with B. Zavala (U.S. Naval Observatory) on interferometry of Mira variables.

Aaron Price worked on several major research projects this year. The peculiar cataclysmic variable Var Her 04 resulted in both a campaign paper and a more detailed analysis coordinated by Aaron that will be submitted shortly. He coordinated most of the AAVSO effort on ASAS J0025+1217, and is working on a project on SS Cyg.

Grant Foster was our first Janet A. Mattei Research Fellow. While at Headquarters in Summer 2005, Grant analyzed the long-term light curves of Cepheids in the AAVSO International Database, looking for secular evolution in period and amplitude. The results will be submitted shortly for publication.

11. Meetings and talks

a. Meetings attended by Arne Henden since he became Director:

National Science Foundation Panel Review, Washington, DC, March 14–15, 2005

Third High-Energy Astrophysics Workshop for Amateur Astronomers and AAVSO Spring meeting, Las Cruces, NM, March 20–25, 2005

Space Telescope Science Institute May Symposium, Baltimore, MD, May 2–5, 2005

Society for Astronomical Science, Big Bear, CA, May 24–26 2005

American Astronomical Society Meeting #206, Minneapolis, MN, May 29–June 2, 2005

Ph.D. Conference School, Pécs, Hungary, September 4–10, 2005

b. Meetings attended by other AAVSO staff members:

Royal Astronomical Society of New Zealand Symposium in Honor of Frank M. Bateson, OBE: "Celebrating 80 Years of Variable Star Astronomy," South Tauranga, New Zealand, December 4, 2004 (Elizabeth Waagen)

American Astronomical Society Meeting #205, San Diego, CA, January 9–13, 2005 (Aaron Price, Matthew Templeton)

New England Archivists Spring 2005 Meeting, "Looking Forward into the Past: The Future of Archives," Simmons College, Boston, April 29–30, 2005 (Michael Saladyga)

American Astronomical Society Meeting #206, Minneapolis, MN, May 29–June 2, 2005 (Aaron Price)

Amateur Astronomy Symposium, Istanbul, Turkey, June 25–26, 2005 (Gamze Menali)

National Virtual Observatory 2nd Summer School, "Science With the Virtual Observatory," Aspen, CO, September 6–15, 2005 (Aaron Price)

Astronomical Society of the Pacific's 117th Annual Meeting, "Building Community: The Emerging EPO Profession," Tucson, AZ, September 14–16, 2005 (Gamze Menali)

Connecticut Star Party, Marlborough, CT, September 30–October 1, 2005 (Aaron Price)

c. Talks given by Arne Henden since he became Director:

Amateur Telescope Makers of Boston, Cambridge, MA, March 10, 2005, Invited talk: "The Amateur's Role in Professional Astronomy"

Third High-Energy Astrophysics Workshop for Amateur Astronomers, Las Cruces, NM, March 23, 2005, "Advanced CCD Workshop"

Society for Astronomical Science (SAS), Big Bear, CA, May 24, 2005, "Beginning CCD Workshop"

SAS, Big Bear, CA, May 26, 2005, Banquet Speaker: "The AAVSO and SAS: A Marriage Made in the Heavens"

AAVSO August Symposium, August 8, 2005, Invited talk: "CVs in Quiescence"

Ph.D. Conference School, Pécs, Hungary, September 10, 2005, Invited talk: "Pro-Am Collaboration and the AAVSO"

d. Talks given by other AAVSO staff members:

AAVSO 93rd Annual Meeting, Waltham, MA, October 29–30, 2004, "The AAVSO Archive Project" (Michael Saladyga)

Royal Astronomical Society of New Zealand Symposium in Honor of Frank M. Bateson, OBE, South Tauranga, New Zealand, December 4, 2004, "AAVSO and RASNZ,VSS: Reaching for the Stars Together" (Elizabeth Waagen)

AAVSO 94th Spring Meeting, Las Cruces, NM, March 20–26, 2005, "Period changes in delta Scuti stars" (Matthew Templeton)

Amateur Astronomy Symposium, Istanbul, Turkey, June 25–26, 2005, "AAVSO: The Bridge Between Amateur and Professional Astronomers" (Gamze Menali)

Connecticut Star Party, Marlborough, CT, "Armchair Astronomy," September 30—October 1, 2005 (Aaron Price)

12. Publications

The following AAVSO-related publications have been published from October 2004 through September 2005:

a. AAVSO publications

Journal of the AAVSO: print, Vol. 32, No. 2; *eJAAVSO*: Vol. 33, Preprint Nos. 1–17; Vol. 34, Preprint Nos. 18, 19. Edited by Charles A. Whitney, with assistance from Elizabeth O. Waagen, Michael Saladyga, and Matthew Templeton.

AAVSO Bulletin 68, 2005: Predicted Dates of Maxima and Minima of 561 Long Period Variables. Prepared by Elizabeth O. Waagen

AAVSO Manual for Visual Observing of Variable Stars—Revised Edition, January 2005. Edited by Sara J. Beck. Note: we are planning on translating this manual into other languages.

AAVSO Alert Notice, Nos. 311–326; *Special PEP Alert Notice*, No. 3. Prepared by Elizabeth Waagen and Aaron Price with assistance by Kerriann Malatesta.

AAVSO CCD Views, Nos. 325–338. Prepared by Aaron Price and Gary Walker

AAVSO Eyepiece Views, No. 310. Prepared by Gamze Menali and Aaron Price with contributions from Mike Simonsen.

AAVSO Special MyNewsFlash: BZ UMa Outburst, SN 2005cs. Prepared by Aaron Price.

"AAVSO Variable Star of the Season" (AAVSO website). Prepared by Kerriann Malatesta (Fall 2004), John Percy (Winter 2005), Matthew Templeton (Spring 2005), Dirk Terrell (Summer 2005).

Observed Minima Timings of Eclipsing Binaries, No. 9. Prepared by Marvin E. Baldwin and Gerard Samolyk.

AAVSO 2005 Ephemeris for Eclipsing Binaries. Prepared by Gerard Samolyk and Marvin E. Baldwin.

AAVSO 2005 Ephemeris for RR Lyrae Stars. Prepared by Gerard Samolyk and Marvin E. Baldwin.

AAVSO Solar Bulletin, Vol. 60, Nos. 9–12; Vol. 61, Nos. 1–8. Prepared by Carl E. Feehrer; SID Reports by Michael Hill.

AAVSO Photoelectric Photometry Newsletter, Vol. 23, No. 2. Edited by John R. Percy.

AAVSO Newsletter, No. 31. Edited by Travis Searle.

AAVSO Press release: "High-Energy "Pro-Am" Meeting Invites Media."

AAVSO Press release: "Amateurs Help Astronomers Unravel A Propeller Star (AE Aqr)."

b. AAVSO staff publications—refereed

Cannizzo, J. K., Shafter, A. W., and Waagen, E. O., "A Recurrence Time versus Orbital Period Relation for the Z Camelopardalis Stars," *PASP*, 117, 931; 2005.

Golovin, A., Price, A., Templeton, M., Cook, L., Crawford, T., Henden, A. (plus 7 coauthors), "Multicolor Observations of ASAS 002511+1217.2," *IBVS*, No. 5611, 1; 2005.

Harris, H. C., Canzian, B., Dahn, C. C., Guetter, H. H., Henden, A. A. (plus 10 coauthors), "Progress in Parallaxes at USNO," *ASPC* 338, 122; 2005.

Homer, L., Szkody, P., Chen, B., Henden, A. (plus 6 coauthors), "XMM-Newton and Optical Follow-up Observations of Three New Polars from the Sloan Digital Sky Survey," *ApJ* 620, 929; 2005.

Koppelman, M. D., Martin, J. C., and Waagen, E. O., "AAVSO and HST Observations of η Carinae," *JAAVSO* 33, *eJAAVSO* Preprint No. 2; 2005.

Munari, U., Henden, A. (plus 15 coathors), "On the distance, reddening and progenitor of V838 Mon," *A&A* 434, 1107; 2005.

Munari, U., Siviero, A., and Henden, A., "Bipolar jet growth and decline in Hen 3-1341: a direct link to fast wind and outburst evolution," *MNRAS* 360, 1257; 2005.

Patterson, J., Thorstensen, J. R., Armstrong, E., Henden, A. A., and Hynes, R. I., "The Dwarf Nova PQ Andromedae," *PASP* 117, 922; 2005.

Price, A., *et al.* "Needs Analysis Survey of Amateur Astronomers for the National Virtual Observatory," *JAAVSO* 34, *eJAAVSO* Preprint No. 20; 2005.

Price, A., and Klingenberg, G. "Secular Evolution in Z Tau," *JAAVSO* 34, *eJAAVSO* Preprint No. 19; 2005.

Price, A., Petriew, V., and Simonsen M., "Charts and Comparison Stars: A Road Map to the Future," *JAAVSO* 33, *eJAAVSO* Preprint No. 7; 2005.

Price, A., Gary, B., Bedient, J., Cook, L., Templeton, M. (plus 28 coauthors), "A New Cataclysmic Variable in Hercules," *PASP* 116, 1117; 2004.

Saladyga, M., "The AAVSO Archive Project," *JAAVSO* 33, *eJAAVSO* Preprint No. 15; 2005.

Schmidt, G., Szkody, P., Homer, L., Smith, P. S., Chen, B., Henden, A. (plus 3 coauthors), "Unraveling the Puzzle of the Eclipsing Polar SDSS J015543.40+002807.2 with XMM and Optical Photometry/Spectropolarimetry," *ApJ* 620, 422; 2005.

Shafter, A. W., Cannizzo, J. K., and Waagen, E. O., "A Recurrence Time versus Orbital Period Relation for the Z Camelopardalis Stars," *PASP* 117, 931; 2005.

Smak, J., and Waagen, E.O., "The 1985 Superoutburst of U Geminorum. Detection of Superhumps," *AcA* 54, 433; 2004.

Szkody, P., Henden, A. (plus 11 coauthors), "Cataclysmic Variables from Sloan Digital Sky Survey. IV. The Fourth Year (2003)," *AJ* 129, 2386; 2005.

Templeton, M.R., Mattei, J.A., and Willson, L.A., "Secular Evolution in Mira Variable Pulsations," *AJ* 130, 776; 2005

Terrell, D., Koff, R. A., Henden, A. A. (plus 7 coauthors), "Photometric Variability in the Strongly Interacting Binary DK Canum Venaticorum," *IBVS*, No. 5642, 1; 2005.

Tramposch, J., Homer, L., Szkody, P., Henden, A. (plus 4 coauthors), "SDSS J210014.12+004446.0: A New Dwarf Nova with Quiescent Superhumps?", *PASP* 117, 262; 2005.

c. AAVSO staff publications—non-refereed

Campbell, P., Hill, M., Howe, R., Kielkopf, J. F., Lewis, N., Mandaville, J., McWilliams, A., Moos, W., Samouce, D., Winkler, J., Fishman, G. J., Price, A. (plus 4 coauthors), "SGR1806: detection of a sudden ionospheric disturbance," *GCN*, 2932, 1; 2005.

Durig, D. T., and Price, A., "GRB050922C: optical observations," *GCN* 4023, 1; 2005.

Durig, D. T., Hohman, D., and Price, A., "GRB050904: optical observations," *GCN* 3916, 1; 2005.

Durig, D. T., Oksanen, A., Pullen, C., and Price, A., "GRB050525: optical observations," *GCN* 3478, 1; 2005.

Gary, B. L., and Price, A., "XRF050522: optical observations," *GCN* 3449, 1; 2005.

Harris, H. C., Canzian, B., Dahn, C. C., Guetter, H. H., Henden, A. A. (plus 10 coauthors), "Progress in Parallaxes at USNO," *ASPC*, 338, 122; 2005.

Hill, R. L., and Waagen, E. O., "Outburst Energies and Precursors to Outbursts for SS Cyg from AAVSO Data," *AAS* 205.1908; 2004. (poster)

Hohman, D., Henden, A., and Price, A., "GRB050505: AAVSO observations," *GCN* 3370, 1; 2005.

Laughlin, G., and Price, A., "Tis The Season to Find Exoplanets," Skyandtelescope.com; 2004.

Mattei, J. A., and Waagen, E. O., "Variable Stars" (Predicted dates of maxima and minima of bright long-period variables and ephemerides of a few easy-to-observe stars.), *The Royal Astronomical Society of Canada Observer's Handbook 2005*, 255, 2005.

Menali, G., Templeton, M.R., and Price, A., "AAVSO Outreach: An International Perspective," Tucson, AZ, September 14–16, 2005. Astronomical Society of the Pacific's 117th Annual Meeting. Building Community: The Emerging EPO Profession (poster).

Monard, B., and Price, A., "GRB050331: no afterglow detected," *GCN* 3159, 1; 2005.

Nelson, P., and Price, A., "GRB050817: negative optical observations," *GCN* 3820, 1; 2005.

Percy, J. R., and Waagen, E. O., "Variable Star of the Year—T Tauri," *The Royal Astronomical Society of Canada Observer's Handbook 2005*, 259, 2005.

Price, A., Gay, P., and Searle, T., "The Slacker Astronomy Podcast," *AAS* 206.0501; 2005 (poster).

Price, A., and Howell, S., "BZ UMa and Var Her 04: Orphan TOADS," *AAS* 206.4203; 2005 (poster).

Price, A. (plus 9 coauthors), "ASAS 002511+1217.2," *IAU Circ.*, No. 8410; 2004.

Renz, W., Hanisch, J., Lindberg, H.-G., Boyd, D., Waagen, E. O., Quinn, N., Rodriguez, D., McGaha, J. E., Henden, A., Vanmunster, T., Martin, B., "Variable Star near M27," *IAU Circ.*, No. 8591; 2005.

Samus, N., Ciroi, S., *et al.*, and Waagen, E. O., "V2631 Cyg = N Cyg 2005," *IAU Circ.*, No. 8487; 2005.

Schnoor, P., and Price, A., "SGR1806: optical transient candidates in SOHO/LASCO images," *GCN*, 2944, 1; 2005.

Shankland, P. D., Blank, D., Laughlin, G., Price, A. (plus 36 coauthors), "A Photometric Monitoring Campaign to Check for Planetary Transits of GJ 876," *AAS* 206.0908; 2005 (poster).

Templeton, M. R., and Willson, L. A., "Mira Stars with Double Maxima: Humps, Bumps, and Resonances," *AAS* 205.5407; 2004 (poster).

Waagen, E. O., "Variable Star Maxima," for the Celestial Calendar, *Sky & Telescope*, Vols. 108.4–110.3; 2004/2005.

Waagen, E. O., Mattei, J. A., Pellock, R. T., Beck, S. J., Davis, K., Malatesta, K. H., Menali, G., Price, A., Saladyga, M., Sechelski, S. T., and Templeton, M. R., "The AAVSO International Database On-Line: Nearly a Century of Variable Star Data at Your Fingertips!", *AAS* 205.1401; 2004 (poster).

Waagen, E. O. (plus 4 coauthors), "Nova Sagittarii 2005 No. 2." *IAU Circ.*, No. 8559; 2005.

Waagen, E. O. (plus 4 coauthors), "V2361 Cygni = Nova Cygni 2005," *IAU Circ.*, No. 8487; 2005.

d. Publications with AAVSO assistance

Boyd, D., "Detection and measurement in the V-band of the white dwarf spin period in the January 2004 outburst of DO (YY) Draconis," *JBAA*; 115, 2005.

Hamilton, R. T., and Sion, E. M., "Dwarf Novae with Newly Determined Parallaxes: Model Analyses of VY Aquarii, RU Pegasi, and T Leonis," *PASP*, 116, 926; 2004.

Kameswara Rao, N., Reddy, B. E., and Lambert, D. L., "R Coronae Borealis Stars at Minimum Light—UW Cen," *MNRAS*, 355, 855; 2004.

Long, K., Froning, C. S., Knigge, C., Blair, W. P., Kallman, T. R., and Ko, Y.-K., "FUV Spectroscopy of the Dwarf Novae SS Cygni and WX Hydri in Quiescence," *ApJ*, 630, 511; 2005.

Lebzelter, T., Hinkle, K. H., Wood, P.R., Joyce, R. R., and Fekel, F. C., "A study of bright Southern Long Period Variables," *A&A*, 431, 623; 2004.

Sobotka, P., "XX Ophiuchi in Deep Minimum after 37 Years," *IBVS*, No. 5571; 2004.

Wheatley, P. J., and Mauche, C. W., "The Astrophysics of Cataclysmic Variables and Related Objects," J. M. Hameury and J. P. Lasota, eds., *ASPC*, 330, 2005.

13. Awards and recognition

a. AAVSO Observer Awards

At the AAVSO Spring meeting in Las Cruces, NM, we presented the following AAVSO Observer Awards to our observers (list of awardees appears in *JAAVSO* 34, 1, p. 112):

one award to an observer making 100,000 or more observations;
six awards to observers making 50,000 or more observations;
ten awards to observers making 10,000 or more observations;
one award to an observer making 100,000 or more CCD observations;
one award to an observer making 50,000 or more CCD observations;
three awards to observers making 25,000 or more CCD observations;
two awards to observers making 10,000 or more CCD observations;
two awards to observers making 5,000 or more CCD observations;
six awards to observers making 2,500 or more CCD observations;
thirteen awards to observers making 1,000 or more CCD observations.

At the AAVSO Annual meeting in Newton, MA, we presented the following Awards to our observers (list of awardees appears in this issue of *JAAVSO* following the Minutes):

eleven awards to observers making 1,500 sunspot observations;
six awards to observers making SID observations.

b. AAVSO Supernova Award

An AAVSO Supernova Award was made to Robert O. Evans, for his visual discovery of SN 2005df in NGC 1559 on Aug. 4.625 UT. The award was announced at the 94th Annual Meeting in Newton, MA.

c. AAVSO Director's Award for 2005

This year's recipient of the Director's Award (jointly given by Elizabeth Waagen and Arne Henden) is Michael Simonsen—"for his vital contributions to special observing programs and the AAVSO International Database; his meticulous work on AAVSO charts and his leadership of the AAVSO Charts Team; his provision of valuable web-based resources for observers, including the Needs-More- Observations program for Long Period Variables and his CVnet site in support of cataclysmic variables." The award was presented to Mike at the 94th Spring Meeting in Las Cruces, NM.

d. AAVSO Merit Award for 2005

The Merit Award is given infrequently in recognition of someone who, by majority vote of the AAVSO Council, is deemed to have made an outstanding contribution as an observer, or as a long- standing benefactor. The Council voted this year to give the Merit Award to Martha L. Hazen—"in recognition of her outstanding service to the AAVSO during many years as Councilor, President and Secretary, recognizing

that she always reflected wisely on the long-term needs of the association and its members and offered sound counsel especially to the presidents and the Director, and technical support to AAVSO observers while assisting in many other ways." The award was presented to Martha at her home prior to the 94th Annual Meeting and was announced at the meeting in Newton, MA.

e. AAVSO William Tyler Olcott Award for 2005

The AAVSO William Tyler Olcott Distinguished Service Award is given to a member of the AAVSO organization for outstanding contributions in mentoring/promoting variable star astronomy. There was unanimous agreement in the Council that this award should be given posthumously to Janet A. Mattei—"for her untiring promotion of variable star observing through her manifold activities as teacher, speaker, mentor, advocate, colleague, researcher, and administrator for over 30 years, and through her unfailing belief in the essential value of variable star observing and variable star observers." The award was announced at the 94th Annual Meeting in Newton, MA, and was accepted by Janet's husband Mike.

f. Special awards for 2005

On occasion, the AAVSO gives out special awards for members for their outstanding service in a category not recognized by another award. This year, we give two Special Recognition Awards.

The first was to Charles A. Whitney—"for thirty years of devoted volunteer service to the Association as Editor of the *Journal of the AAVSO*. Through his knowledge, guidance, constant support, and professionalism, he has helped to make the Journal into a recognized and respected resource for variable star research, and in this way, has helped to further the goals of the AAVSO." The award was presented to Chuck at the 94th Annual Meeting in Newton, MA.

The second was to Charles E. Scovil—"for forty years of devoted volunteer service to the Association, and in particular for 35 years as Chair of the AAVSO Telescope Committee, where your expertise with observing equipment was invaluable, and for 13 years as Chair of the AAVSO New Charts Committee, where your diligence and meticulous work helped realize the standardization of AAVSO charts and make more efficient their creation, drafting, and distribution." The award was presented to Charles at the 94th Annual Meeting in Newton, MA.

With Charles' retirement from the AAVSO Telescope Committee comes the retirement of the committee itself from the list of AAVSO standing committees. The Telescope Committee was created in 1917 to manage the loan of telescopes that had been donated to the Association to variable star observers in need of an instrument. In time, this practice proved impractical, and a decision was made to sell all telescopes donated to the Association and invest the income from the sales. The Telescope Committee took on this task, refurbishing equipment as necessary and overseeing its sale. Once the stock of equipment had been sold, the committee had occasional work as a telescope or other equipment was donated, but in recent

years there has been very little of this. It was decided that there was no longer a need for a standing committee dedicated to such occasional work, so after Charles retired, the committee was dissolved.

14. Acknowledgements

With appreciation and gratitude, we thank all who have contributed to the Association this year.

We remember Clint Ford and are grateful to him for providing us with our own Headquarters and with a legacy that assures a sound future for the AAVSO.

We remember Margaret Mayall for her dedicated service to the AAVSO, for making it survive during very hard times, and for the bequest that she and Newton made to assure the sound future of the AAVSO.

We remember Janet Akynz Mattei for her devotion and her contributions to the AAVSO that led to its present state as the world's largest variable star observing organization and one highly respected by the international professional astronomical community, committed to science education worldwide, and dedicated to the fostering of professional-amateur astronomical collaboration.

Our appreciation and thanks go to our enthusiastic and dedicated observers—this year, 740 of them from 43 countries—who are the heart of the AAVSO and whose ongoing efforts make this association vital to variable star research. Additional thanks go to all those who have contributed to the Quick-Look file for *MyNewsFlash*, and to our special observing programs.

Our thanks go to our members for their support of the AAVSO with their dues; special thanks to those who are sponsoring the membership of an active observer, and to those who have generously contributed above their dues so that we may serve you, our members, and the astronomical community, well.

Our sincere thanks and appreciation go to our Committee Chairs who give of their time and wisdom so generously to the Committee(s) for which they are responsible: Gary Walker, Marvin Baldwin, Rev. Kenneth Beckmann, Carl Feehrer, Mike Hill, Charles Scovil, and Rev. Robert Evans.

Our Officers and Council have continued to be steadfast and devoted to the association this year. We appreciate the contributions and support of our Vice Presidents Kevin Marvel and David B. Williams, our Clerk Michael Mattei, our Council members Gary Billings, Lewis Cook, Jaime Garcia, Karen Meech, Charles Pullen, Paula Szkody, and Doug West, and our Past President Daniel Kaiser.

We especially thank William Dillon, our President, whose unanticipated responsibilities continued this year, for his time, wisdom, support, and patience, and particularly for his efforts related to hiring the fourth Director of the AAVSO.

We are grateful to Martha Hazen, who retires as AAVSO Secretary, for her years of dedication, wise counsel, and support of AAVSO Directors. We were pleased to recognize her many contributions with the 37th AAVSO Merit Award.

We are most grateful to our Treasurer, Lou Cohen, for his wisdom, guidance,

and generous contribution of time, and to our accountant Jane Caton, for her careful work and dedication.

Sincere thanks go to Dan Kaiser for his overseeing our Mentorship program, and to Doug Welch for his administration of our on-line Discussion Group and HEN Discussion Group.

Our thanks go to Bruce Sumner and Ron Zissell for their work on comparison star sequences for AAVSO charts, to Charles Scovil, Marc Biesmans, AAVSO Chart Team leader Mike Simonsen, and all the Chart Team members for their work on AAVSO charts, and to AAVSO Comparison Star Database Project Team Leader Vance Petriew and all the CompDB Team members for their work on digitizing and cataloguing the comparison stars on all AAVSO charts.

Our sincere thanks go to Charles Whitney for his continuing editorship of the *Journal of the AAVSO*. We were pleased to recognize Charles' 30 years of editorship with an AAVSO Special Award this year.

Our sincere thanks go to John Percy for his ongoing excellent editorship of the AAVSO Photoelectric Photometry Newsletter and for his support of the AAVSO Photoelectric Photometry program.

Our thanks and appreciation go to Len Abbey and to Geir Klingenberg for their valuable contributions in programming.

Our sincere thanks go to AAVSO Headquarters volunteer Arthur Ritchie for his ongoing assistance with digitizing monthly sunspot reports, and for his cheerful assistance with other projects large or small.

Thanks go to Stamford Observatory for allowing Charles Scovil and John Griesé to use the 22-inch telescope for making variable star observations, and for allowing Charles Scovil to use the facilities of the observatory to prepare charts.

We have been fortunate to receive financial support from institutions and government agencies this year, and we acknowledge this support with thanks and appreciation.

We are grateful to have the support of so many individuals and organizations!

We have had an excellent year under the combined leadership of Elizabeth Waagen and Arne Henden. With your continuing help, we hope to make significant advances during the upcoming year.

Table 1. AAVSO Observer Totals 2004–2005 by Country

Country	*No. Observers*	*No. Obs.*	*Country*	*No. Observers*	*No. Obs.*
ARGENTINA	3	379	JAPAN	4	1,906
AUSTRALIA	29	104,068	MALTA	2	125
AUSTRIA	2	960	NETHERLANDS	14	10,947
BELARUS	1	48	NEW ZEALAND	2	37,863
BELGIUM	16	65,899	NORWAY	6	8,240
BRAZIL	12	4,066	PERU	1	7
CANADA	30	124,469	POLAND	26	14,444
CHILE	3	931	PORTUGAL	4	7,736
CHINA	1	93	ROMANIA	11	7,699
CROATIA	1	1,173	RUSSIA	16	3,448
CZECH REPUBLIC	1	93	SCOTLAND	1	5
DENMARK	2	72	SINGAPORE	1	1
ENGLAND	28	54,446	SLOVENIA	1	375
FINLAND	9	7,366	SOUTH AFRICA	9	9,006
FRANCE	32	36,515	SPAIN	37	9,521
GERMANY	37	19,739	SWEDEN	4	320
GREECE	8	2,775	SWITZERLAND	5	943
HUNGARY	72	19,629	TURKEY	3	218
INDIA	2	32	UKRAINE	7	4,711
IRELAND	3	201	UNITED ARAB EMIRATES	1	7
ISRAEL	2	441	USA	264	389,297
ITALY	27	5,088	TOTAL	740	955,302

Table 2. AAVSO Observer Totals 2004–2005 USA by State or Territory

State		*No. Observers*	*No. Obs.*	*State*		*No. Observers*	*No. Obs.*
ALABAMA	(AL)	3	2,600	NEBRASKA	(NE)	2	123
ARIZONA	(AZ)	14	6,511	NEVADA	(NV)	1	47
CALIFORNIA	(CA)	36	54,884	NEW HAMPSHIRE	(NH)	3	6,290
COLORADO	(CO)	6	763	NEW JERSEY	(NJ)	1	74
CONNECTICUT	(CT)	7	2,164	NEW MEXICO	(NM)	9	55,585
FLORIDA	(FL)	6	19,553	NEW YORK	(NY)	11	101,543
GEORGIA	(GA)	3	615	NORTH CAROLINA	(NC)	1	38
HAWAII	(HI)	1	753	NORTH DAKOTA	(ND)	1	4
ILLINOIS	(IL)	13	11,347	OHIO	(OH)	6	442
INDIANA	(IN)	8	18,948	OKLAHOMA	(OK)	3	275
IOWA	(IA)	2	3,200	OREGON	(OR)	3	23,486
KANSAS	(KS)	4	4,243	PENNSYLVANIA	(PA)	9	1,242
KENTUCKY	(KY)	2	190	PUERTO RICO	(PR)	1	46
LOUISIANA	(LA)	5	144	RHODE ISLAND	(RI)	2	1,807
MAINE	(ME)	3	2,644	TENNESEE	(TN)	4	469
MARYLAND	(MD)	9	3,435	TEXAS	(TX)	14	3,169
MASSACHUSETTS	(MA)	21	20,028	UTAH	(UT)	2	9
MICHIGAN	(MI)	7	7,718	VIRGINIA	(VA)	6	737
MINNESOTA	(MN)	11	8,552	WASHINGTON	(WA)	4	77
MISSISSIPPI	(MS)	1	7	WEST VIRGINIA	(WV)	3	595
MISSOURI	(MO)	3	1,547	WISCONSIN	(WI)	12	23,366
MONTANA	(MT)	1	27	TOTAL		264	389,297

Table 3. AAVSO Observers, 2004–2005.

Code	*Org.*	*Name*	*No. Obs.*
AAP		A. Abbott, Canada	3754
AAN	02	A. Abe, Germany	209
AJT		J. Agustoni, Brazil	16
AMI		M. Aho, Finland	416
AWL		W. Alexander, VA	268
ASAS2		All Sky Automated Survey 2, Chile	12
ASAS3		All Sky Automated Survey 3, Chile	912
ACO		C. Allen, Sweden	280
AJC	13	J. Almeida, Brazil	224
AJG		J. Almeida, Portugal	12
AJV	15	J. Alonso, Spain	79
ARC		R. Altenburg, PA	22
AKV		K. Alton, NJ	74
AAA	12	A. Alves, Brazil	417
AMH		M. Amato, CT	24
AAQ	03	A. Ambrus, Hungary	184
AAX	13	A. Amorim, Brazil	1682
ACI		C. Anderson, CO	27
AKG	19	K. Andersson, Sweden	3
AJE		J. Andrei, Romania	15
ABG	08	B. Andresen, Norway	658
AWJ		W. Aquino, NY	108
AWY	13	W. Araujo, Brazil	136
AAT	15	A. Ardanuy, Spain	22
AAM		A. Arminski, Poland	11
AMN		M. Armstrong, AZ	754
ADN		D. Arnautovic, Australia	39
ARJ		J. Arnold, AL	5
ARN	01	L. Arnold, France	6
ATI	03	T. Asztalos, Hungary	847
ADI	02	D. Augart, Germany	287
AAV		A. Avtanski, CA	34
ARX		R. Axelsen, Australia	208
BYG	03	G. Babcsany, Hungary	4
BIX		I. Bacon, Australia	63
BWW		W. Bakewell, CA	1
BCD		R. Ball, England	6
BIV	03	I. Balogh, Hungary	593
BXK		K. Bambery, Australia	5
BVN		M. Banfi, Italy	65
BGZ		G. Banialis, IL	50
BBZ	03	S. Barabas, Hungary	4
BXA	09	A. Baransky, Ukraine	242
BBO		B. Barnes, TX	28
BSR	18	S. Baroni, Italy	146
BCT	01	C. Barret, France	23
BVT		T. Bartlett, TX	35
BJOH		J. Baxter, CA	2049
BBA		B. Beaman, IL	540
BWX	27	A. Beaton, Canada	378
BSZ		S. Beckwith, MA	1610
BXG		G. Beddow, England	5
BJS		J. Bedient, HI	753
BYE		J. Beninger, Singapore	1
BTY		T. Benner, PA	459
BEB		R. Berg, IN	1
BIZ		J. Bialozynski, WI	3928
BIC	01	L. Bichon, France	10948
BMM	05	M. Biesmans, Belgium	1073
BHK		H. Bilor, Poland	1
BIQ		R. Bissinger, CA	2949
BXN	01	M. Bisson, France	1031
BKL		J. Blackwell, NH	1875
BZH		J. Bohusz, Poland	5
BVS		S. Bolzoni, Italy	1
BZU		M. Bonnardeau, France	843
BRJ		J. Bortle, NY	5427
BMU	04	R. Bouma, Netherlands	295
BDG	20	D. Boyd, England	9878
BQJ	03	J. Bozsoky, Hungary	5
BMK		M. Bradbury, MA	217
BXS		S. Brady, NH	4411
BNW	02	W. Braune, Germany	54
BDL		D. Breslin, MA	2
BTB		T. Bretl, MN	144
BHA	02	H. Bretschneider, Germany	1490
BQE		E. Briggs, Canada	1
BSM		S. Brincat, Malta	26
BOS	05	E. Broens, Belgium	15
BJQ		J. Brooks, CA	6
BQS	15	J. Bros, Spain	266
BXV	15	X. Bros, Spain	577
BFL		L. Brown, CT	33
BOA	01	A. Bruno, France	46
BIW		N. Butterworth, Australia	23286
CCB		C. Calia, CT	243
CPN		P. Campbell, Canada	193
CMP		R. Campbell, FL	312
CEM	15	E. Capella, Spain	347
CXN		J. Carlson, MA	29
CVJ	06	J. Carvajal Martinez, Spain	54
CRI	15	R. Casas, Spain	792
CJS		J. Case, MO	1385
CLQ		L. Cason, VA	31
CKN		K. Castle, AZ	25
CWO		W. Castro, OH	34
CQJ		J. Centala, IA	3181
CBI		B. Chandler, CA	31
CHG	01	H. Chantegros, France	435
CNT		D. Chantiles, CA	437
CGF		G. Chaple, MA	6422
CPQ		P. Charleton, England	89
CGP	27	G. Charpentier, Canada	7
CDY		D. Chekhovich, Russia	14
CKJ		J. Cheng, PA	29
CWN		W. Cheng, CA	11
CCY		C. Chiselbrook, GA	576
CPH	01	P. Claisse, France	5

Table 3. AAVSO Observers, 2004–2005, cont.

Code	*Org.*	*Name*	*No. Obs.*
CLK		W. Clark, MO	126
CWP		W. Clarke, CA	23
CPY		P. Clayton, England	42
CGY		T. Climent Garcia, Spain	33
CPS	05	P. Cloesen, Belgium	322
CRX		R. Cnota, Poland	167
CKH	05	H. Coeckelberghs, Belgium	57
CCT	13	C. Colesanti, Brazil	1388
CJI	15	J. Coloma, Spain	1292
CME	18	E. Colombo, Italy	405
CMG	04	G. Comello, Netherlands	6170
CPO		P. Conde, Australia	129
CXA		A. Cook, CA	2
COO		L. Cook, CA	10065
CK		S. Cook, NM	5857
CWT		W. Cooney, LA	22
COM	10	T. Cooper, South Africa	459
CPI		P. Corelli, Italy	4
CGI		G. Corfini, Italy	1
CUA		A. Corlan, Romania	660
CXR		R. Corlan, Romania	909
CDV		D. Cornell, IL	7
CLZ	01	L. Corp, France	10
CAI		A. Correia, Portugal	3832
CUJ		J. Costa, MD	12
CNQ		N. Costa, Portugal	61
COV		V. Coulehan, NY	240
CWD		D. Cowall, MD	2
CDN		D. Cowles, LA	11
CR	14	T. Cragg, Australia	1200
CFY		J. Craig, MA	186
CTX		T. Crawford, OR	10273
CCQ		C. Cristian, Romania	8
CRR		R. Crumrine, NY	35
CTI	03	T. Csorgei, Hungary	496
CSM	03	M. Csukas, Romania	699
CCO	06	A. Cubillo Rubiato, Spain	106
CKB		B. Cudnik, TX	1309
DQR		R. D'Imperio, VA	21
DCL		C. Daffin, NC	38
DLS		L. Darling, CA	14
DAM	06	A. Darriba Martinez, Spain	126
DJS	20	J. Day, England	103
DGR		R. De Graeve, MI	14
DPP	05	P. De Ponthiere, Belgium	4757
DSJ	13	J. De Souza Aguiar, Brazil	8
DBO		B. Demory, Switzerland	1
DFR		F. Dempsey, Canada	5
DEK	05	K. Dequick, Belgium	12
DAT		A. Derdzikowski, Poland	87
DAA	03	A. Derekas, Hungary	8
DNO		O. Deren, Poland	534
DAC		A. Deshmukh, India	1
DSI		G. Di Scala, Australia	2159
DDD		D. Dickinson, AZ	146
DPA	05	A. Diepvens, Belgium	1369
DSV		S. Diesso, WI	38
DRG		R. Diethelm, Switzerland	681
DAP	07	A. Diez Gago, Spain	1
DLA		A. Dill, KS	194
DIL		W. Dillon, TX	104
DRL		S. Dirocco, OH	58
DVQ	03	V. Dobos, Hungary	1
GDB	03	G. Domeny, Hungary	37
DLX	03	L. Dorogi, Hungary	4
DXA		A. Douvris, Greece	46
DRI		R. Doxtater, AL	6
DMO	01	M. Dumont, France	748
CLW		D. Durig, TN	3
DRZ		R. Durkee, MN	1505
DAO		A. Dutton, Australia	144
DKS		S. Dvorak, FL	18718
DGP		G. Dyck, MA	2230
DBZ		B. Dzikowski, Poland	25
EMA		M. Eichenberger, Switzerland	31
EER		E. Eker, Turkey	60
EPE	01	P. Enskonatus, Germany	276
ERB		B. Eramia, WA	25
EJO	03	J. Erdei, Hungary	1142
EWK		K. Ewing, FL	9
FTB		T. Fabjan, Slovenia	375
FBO		B. Fain, MT	27
FSU		S. Fanutti, Canada	143
FEO	03	E. Farkas, Hungary	94
FMX	14	F. Farrell, Australia	1
FAJ	03	A. Fejes, Hungary	150
FSJ	01	J. Fis, France	27
FLU		L. Fiszer, Poland	4
FGN		G. Fleerackers, Belgium	5
FDA	03	A. Fodor, Hungary	93
FBZ	03	B. Fodor, Hungary	5
FMR		M. Fonovich, Croatia	1173
FJQ		J. Foster, CA	1060
FXJ		J. Fox, MN	212
FBN	10	B. Fraser, South Africa	236
FML	04	C. Fridlund, Netherlands	20
FMG		G. Fugman, NE	119
GBZ	21	O. Gabzo, Israel	439
GHT	27	G. Gaherty, Canada	200
GMO		M. Gainer, PA	24
GPG		P. Garossino, TX	3
GBL		B. Gary, AZ	1313
GKI		K. Geary, Ireland	92
GCP	02	C. Gerber, Germany	379
GHS		H. Gerner, WI	551
GMV		M. Geselle, Germany	3
GMJ	10	M. Geyser, South Africa	12
GAO		A. Giambersio, Italy	1
GGU	04	G. Gilein, Netherlands	618

Table 3. AAVSO Observers, 2004–2005, cont.

Code	Org.	Name	No. Obs.
GAM		A. Gilmore, New Zealand	1890
GVN		V. Giovannone, NY	26
GMY		M. Glennon, Ireland	96
GFT		F. Gobet, France	861
GFB		W. Goff, CA	33361
GSH	09	A. Golovin, Ukraine	3804
GOT	01	T. Gomez, Spain	32
GPJ		P. Gonzales, CA	48
GGQ	07	G. Gonzalez Anton, Spain	102
GZN	07	L. Gonzalez Herrera, Spain	241
GGZ	03	Z. Gorgei, Hungary	110
GGC		G. Gotta, Italy	42
GKA		K. Graham, IL	4354
GPE		Grainger Observatory, NH	4
GRL	08	B. Granslo, Norway	640
GTI		T. Graves, CA	14
GMZ		M. Graziani, Italy	672
GVD	16	V. Grigorenko, Russia	66
GBI		B. Grim, UT	0
GQJ		J. Gross, AZ	10
GCO		C. Gualdoni, Italy	2404
GUN	01	J. Gunther, France	2227
GGX	04	G. Guzman, France	267
HCS	03	C. Hadhazi, Hungary	2069
HGH		G. Hagen, Germany	21
HTY		T. Hager, CT	4
HKB		B. Hakes, IL	17
HK		E. Halbach, CO	56
HP		W. Hampton, CT	22
HTQ		T. Harriman, CA	6
HBB		B. Harris, FL	37
HAV		R. Harvan, MD	432
HAI		A. Hastings, MA	28
HDY	03	D. Hatvani, Hungary	9
HJK		J. Hauk, CO	119
HHU	05	H. Hautecler, Belgium	2482
HKY	27	K. Hay, Canada	5
HAB		R. Hays, IL	1174
HY		A. Heasley, FL	3
HBD		B. Heathcote, Australia	300
HKN		K. Hedrick, WV	128
HQA		A. Henden, MA	2064
HTG	08	T. Henriksen, Norway	39
HGO		G. Henson, TN	79
HES		H. Hesseltine, WI	1735
HIV	03	I. Hidvegi, Hungary	12
HRI		R. Hill, AZ	160
HIM		W. Hill, MA	51
HZR	02	R. Hinzpeter, Germany	1027
HIR		Y. Hirasawa, Japan	860
HJS		J. Hissong, OH	2
HTA		T. Hoare, England	45
HGK		G. Hochstenbach, Holland	1
HJX	13	J. Hodar Munoz, Brazil	37
HWD		W. Hodgson, Australia	63
HEK	11	E. Hoeg, Denmark	7
HDF		D. Hohman, NY	89
HZJ		J. Holtz, PA	17
HJQ		J. Holtzman, NM	1758
HOO	04	G. Hoogeveen, Netherlands	834
HJZ		J. Horne, CA	64
HJA		J. Hudson, CA	412
HDU		D. Hurdis, RI	10
HUR	20	G. Hurst, England	2412
HUZ	27	R. Huziak, Canada	38450
NUD02		D. Iden, IL	19
ILE	03	E. Illes, Hungary	635
IUR		Indiana University Roboscope, IN	8026
IPA	12	P. Ingrassia, Argentina	378
IVM	16	V. Ivanov, Russia	1298
JMA		M. Jacquesson, France	69
JTP	01	P. Jacquet, France	189
JAT	03	T. Jakabfi, Hungary	84
JM		R. James, NM	46352
JSY		S. Jedrzejewski, Poland	1
JKK	11	K. Jensen, Norway	145
JLR		R. Jepeal, CT	1563
JGE	06	G. Jiminez, Spain	1
JOG		G. Johnson, MD	121
JON	05	K. Jonckheere, Belgium	4
JA	14	A. Jones, New Zealand	35973
JCN	20	C. Jones, England	1203
JJI		J. Jones, OR	11605
JRW	10	R. Jones, South Africa	293
JRC	15	R. Josa, Spain	44
JSZ	03	S. Jozsa, Hungary	57
KB		W. Kaminski, NM	17
KAM	02	A. Kammerer, Germany	55
KMO		M. Kardasis, Greece	25
KAZ	03	A. Kaszt, Hungary	2
KEI		E. Kato, Australia	22
KMQ	06	M. Kearns, Spain	7
KSN		S. Kenaga, IN	9
KAK	03	A. Kereszturi, Hungary	1
KZX	03	Z. Kereszty, Hungary	1761
KSH		S. Kerr, Australia	17819
KKQ		K. Kessler, MN	813
KSZ	03	S. Keszthelyi, Hungary	363
KKX		K. Kida, Poland	257
KRB		R. King, MN	641
KQR		R. Kinne, NY	7
KSJ		S. Kinsella, Canada	9
KCQ		C. Kirby, NM	62
KIR		P. Kirby, AZ	263
KIL	03	L. Kiss, Australia	1920
KMM	09	M. Kititsa, Ukraine	18
KPC		P. Klages, England	6
KTX	27	T. Klassen, Canada	534
KGE	08	G. Klingenberg, Norway	5844

Table 3. AAVSO Observers, 2004–2005, cont.

Code	Org.	Name	No. Obs.
KWL		W. Kloehr, Germany	36
KCH		C. Knapp, WV	33
KPL		P. Kneipp, LA	61
KGT		G. Knight, ME	30
KSP		S. Knight, ME	44
KOC	03	A. Kocsis, Hungary	79
KRV		R. Koff, CO	442
KHL		M. Kohl, Switzerland	69
KHJ		H. Koller, Canada	1
KRS		R. Kolman, IL	1817
KMA		M. Komorous, Canada	2267
KDZ		D. Kopczynski, Poland	119
KMP		M. Koppelman, MN	3013
KSG		G. Koronis, Greece	56
KSO		S. Korotkiy, Russia	6
KCY		D. Korycansky, CA	403
KOS	03	A. Kosa-Kiss, Romania	3577
KLX		L. Koscianski, MD	131
KAF	03	A. Kovacs, Hungary	334
KVI	03	I. Kovacs, Hungary	416
KJU	03	J. Kovacs, Hungary	1
KSR	03	S. Kovacs, Hungary	761
KFK		F. Krafka, TX	46
KTC		T. Krajci, NM	1334
KWO	02	W. Kriebel, Germany	2640
KIS	02	G. Krisch, Germany	2423
KAA		A. Kroes, WI	716
KTZ		T. Krzyt, Poland	307
KUC	01	S. Kuchto, France	0
KZQ	03	Z. Kuli, Hungary	179
KUO		C. Kuo, MA	5
KMI	16	M. Kuzmin, Russia	32
KSQ		S. Kuznetsov, Russia	635
LCR	15	C. Labordena, Spain	399
LTO	02	T. Lange, Germany	2060
LMF	13	M. Lara, Brazil	61
LMN		M. Larsson, Sweden	15
LJJ		J. Laurent, France	80
LZT		T. Lazuka, IL	1411
LRO		R. Leadbeater, England	27
LEB	01	R. Lebert, France	395
LMT		M. Legutko, Poland	254
LDA		D. Lehman, MD	72
LDI		D. Lehmann, Germany	38
LNZ		G. Lenz, LA	18
LJP		J. Leppert, ND	4
LEV		A. Leveque, CA	144
LSQ		S. Levine, AZ	168
LVY		D. Levy, AZ	37
LMI		M. Lierl, KY	11
LIW		W. Liller, Chile	7
LGO		G. Lilley, GA	20
LCI		C. Limbach, WI	33
LHG	19	H. Lindberg, Sweden	22
LAI	27	A. Ling, Canada	39
LMK		M. Linnolt, CA	1148
LLZ	03	L. Liziczai, Hungary	413
LRZ	03	M. Lorincz, Hungary	3
LRD		D. Loring, UT	9
LX		W. Lowder, NY	94,946
LTB		T. Lubbers, MN	6
LFZ		F. Lucidi, Italy	14
LKA		K. Luedeke, NM	12
LMJ		M. Luostarinen, Finland	109
MDW		W. MacDonald II, Canada	5171
MHO		J. Madiedo, Spain	1
MMT	17	M. Maenpaa, Finland	18
MLI		L. Maisler, NY	172
MVO	17	V. Makela, Finland	42
MQL		S. Mandelli, Italy	38
MKE		R. Manske, WI	201
MOF		O. Maraev, Russia	37
MGK		G. Maravelias, Greece	10
MPB		P. Marini, Argentina	1
MKW		A. Markiewicz, Poland	2241
MXS	03	S. Marosi, Hungary	68
MQY		L. Marschall, PA	82
MMN		M. Martignoni, Italy	2
MYC		C. Martin, NE	4
MMG		M. Martinengo, Italy	79
MRX	02	H. Marx, Germany	979
MN		H. Mason, NV	47
MAV	16	D. Matsnev, Russia	1
MTH		H. Matsuyama, Australia	3442
MTM		M. Mattei, MA	4
MGE		G. Mavrofridis, Greece	860
MKB		K. McCarthy, England	9
MBT		T. McDonagh, MA	32
MDP		P. McDonald, Canada	865
MGH	20	H. McGee, England	555
MCI		B. McInnerny, England	40
MVQ		V. Medvedev, Russia	34
MED	20	K. Medway, England	1294
MIQ		I. Megson, England	1174
MMB	04	M. Meiling, Netherlands	1
MVS	27	S. Meister, Germany	2
MGQ		G. Menali, MA	1
MHI		H. Menali, MA	986
MQZ		M. Mendez Majuelos, Spain	8
MDJ	12	D. Mendicini, Argentina	0
MTK		T. Michalik, VA	330
MOK	11	O. Midtskogen, Norway	914
MXM		M. Mifsud, Malta	99
MXL	20	R. Miles, England	17975
MPF		P. Mitrofanov, Russia	286
MZS	03	A. Mizser, Hungary	266
MCE		E. Mochizuki, Japan	5
MQD	03	M. Mod, Hungary	1
MRV		R. Modic, OH	108
MIZ	03	I. Mohacsi, Hungary	3

Table 3. AAVSO Observers, 2004–2005, cont.

Code	Org.	Name	No. Obs.
MOU	15	J. Molina, Spain	20
MOC	03	C. Molnar, Hungary	12
MPV	03	P. Molnar, Hungary	2134
MOZ		Z. Molnar, Romania	5
MLF	10	I. Monard, South Africa	7730
MF		F. Montague, MA	23
MHC	12	C. Montalvo, Peru	7
MNN		N. Montecchiari, Italy	5
MDM		D. Moody, Scotland	5
MOI	01	E. Morillon, France	4505
MOW		W. Morrison, Canada	5077
MXK	03	A. Morvai, Hungary	3
MVZ	03	J. Morvai, Hungary	9
MPS	27	P. Mozel, Canada	11
MMH		M. Muciek, Poland	26
MKH		S. Mukherjee, India	31
MMU		M. Munkacsy, RI	1797
MUY	05	E. Muyllaert, Belgium	11915
NIS	03	I. Nagy, Hungary	1
NDQ		D. Naillon, France	553
NLX	14	P. Nelson, Australia	7687
NMI		M. Nicholas, AZ	989
NMR	20	M. Nicholson, England	3630
NOT		O. Nickel, Germany	150
NGM	15	G. Nieto, Spain	114
NFD	04	F. Nieuwenhout, Netherlands	43
NWP		W. Norby, MO	36
NCH		C. Norris, TX	198
NKL		K. Nuber, Germany	104
OCE		E. O'Connor, Canada	2
OCN	27	S. O'Connor, Canada	32
ONJ		J. O'Neill, Ireland	13
OSN		S. Oatney, KS	750
OES		D. Oesper, WI	4
OLF		L. Offutt II, MN	39
OYE		Y. Ogmen, Turkey	134
OAR		A. Oksanen, Finland	4522
OHJ	03	H. Olle, Hungary	4
ODG		D. Ondich, MN	5
OJR	06	J. Osorio, Spain	3231
OPR		P. Ossowski, Poland	9
OSV	03	L. Osvald, Hungary	4
OAG	06	A. Otero Garzon, Spain	2
OJE		J. Oti Gonzalez, Spain	36
OJJ		J. Ott, CO	113
OJS		J. Ott, KY	179
OCR	05	C. Otten, Belgium	1423
PPK	17	P. Paakkonen, Finland	720
PCC	18	R. Papini, Italy	212
PPS	03	S. Papp, Hungary	3257
PTQ		T. Parson, MN	2121
PJJ	15	J. Pastor, Spain	81
PKV		K. Paxson, TX	15
PEX	14	A. Pearce, Australia	10113
PN		A. Pearlmutter, MA	10
PEI	11	E. Pedersen, Denmark	65
PEG	01	C. Peguet, France	729
PCX		C. Perello, Spain	1
PIV		I. Peretto, Italy	290
PJT	27	J. Petriew, Canada	3529
PVA	27	V. Petriew, Canada	60561
PGE	02	G. Petter, Germany	72
PRP		R. Pickard, Australia	8
PXR	20	R. Pickard, England	412
PBN		B. Pickett, Australia	1
PLQ	01	L. Pinatelle, France	129
PGU	18	G. Pinazzi, Italy	50
PHT		H. Pinkston, VA	4
PMZ	15	M. Pinto, Spain	7
PFB		F. Pires, Brasil	5
PIJ	03	J. Piriti, Hungary	781
PIR	03	D. Piroska, Hungary	350
PPL		P. Plante, OH	211
PPZ		P. Plaszczyk, Poland	536
PNC	01	N. Ploix, France	1
PAW		A. Plummer, Australia	4736
PRX		R. Poklar, AZ	714
PRS		R. Poleski, Poland	15
PMO	10	M. Poll, South Africa	66
PVR	03	V. Polozun, Hungary	4
PWR		R. Powaski, OH	29
POX		M. Poxon, England	582
PYG		G. Poyner, England	11689
PAH		A. Price, MA	503
PRI		L. Price, WI	29
PDQ	01	D. Proust, France	35
PUJ	06	F. Pujol, Spain	627
PCH		C. Pullen, CA	4
PSY		S. Pyatih, Belarus	48
QW	02	W. Quester, Germany	50
QNK	20	N. Quinn, England	780
RKE	02	K. Raetz, Germany	407
RIG		I. Rafalovsky, IL	1716
RBK		B. Ramotowski, NM	2
RWA		W. Rauscher, PA	312
RFA		F. Reichenbacher, AZ	1719
RZS	03	Z. Reiczigel, Hungary	22
REP	24	P. Reinhard, Austria	460
RWG	02	W. Renz, Germany	22
RXM	03	M. Repas, Hungary	4
RMQ		M. Reszelski, Poland	161
RNA	03	N. Rezsabek, Hungary	58
RJG		J. Ribeiro, Portugal	3831
RIX	14	T. Richards, Australia	7324
RKT		K. Richardson, CA	72
RPB		P. Richwine, AZ	103
RQ		C. Ricker, MI	11
RRZ	03	R. Ricza, Hungary	306
RCW		C. Robertson, KS	3174

Table 3. AAVSO Observers, 2004–2005, cont.

Code	Org.	Name	No. Obs.
RSE		S. Robinson, MD	2118
RJX	01	J. Roca, France	88
RZD	06	D. Rodriguez, Spain	324
RMU	07	M. Rodriguez Marco, Spain	39
RJW		J. Rogers, Reading	4
RRO		R. Rogge, Germany	2
RCX		C. Rose Iv, MS	7
ROG		G. Ross, MI	331
RGN		G. Rossi, Italy	94
RR		R. Royer, CA	37
RJV	07	J. Ruiz Fernandez, Spain	8
RPH		H. Rumball-Petre, CA	17
REM		E. Rumbo, Australia	789
RTH		T. Rutherford, TN	20
SQV	06	J. Sainz Benito, Spain	19
SJQ		A. Sajtz, Romania	946
SSU		S. Sakuma, Japan	1024
SIE		A. Salati, Italy	1
SVP	15	V. Sallares Pujol, Spain	56
SAH		G. Samolyk, WI	15293
SAN		J. Sanchez, Hungary	1
SQU		J. Sanchez Lopez, Spain	41
SNN		J. Sanford, CA	1
SXY		A. Sankowski, Poland	12
STC		G. Santacana, PR	46
SKI	03	K. Sarneczky, Hungary	60
SGE		G. Sarty, Canada	290
SSQ		R. Sass, NM	191
SVX		D. Savinov, Russia	2
SVA		A. Saw, Australia	353
SFI		T. Scarmato, Italy	61
SXK	02	M. Schabacher, Germany	155
SCK		B. Schaefer, LA	32
SDY	02	D. Scharnhorst, Germany	434
SFS		S. Schiff, VA	83
SIU	02	J. Schirmer, Germany	30
SPK		P. Schmeer, Germany	42
SHV	03	A. Schmidt, Hungary	174
SWU	04	W. Schmidt, Netherlands	51
SDEW		D. Smith, TX	42
SQR		R. Schmude, GA	19
SUF		C. Schneider, CA	21
SQE		R. Schoenstene, IL	199
SCZ	01	E. Schweitzer, France	31
SCP	10	P. Scully, South Africa	2
SFE		F. Seagrave, Hungary	1
SQW		W. Selvig, Canada	51
SIV		I. Sergey, Russia	194
SDF		D. Shackleford, CA	104
SHS		S. Sharpe, ME	2570
SDP		D. Sharples, NY	23
SSA		A. Sharpless, WA	37
SVV		V. Shchukin, Russia	768
SFY		J. Shears, England	1366
SYC	27	C. Sheppard, Canada	56
SERI		E. Sheppard, WA	1
SHW		W. Sherman, TX	75
SBW	09	W. Sherstguk, Ukraine	50
SQH	13	R. Shida, Brazil	8
SLH		L. Shotter, PA	197
SYF		Z. Siciarz, Poland	1701
SIG		D. Siegrist, MA	11
SNE		N. Simmons, WI	612
SXN		M. Simonsen, MI	7200
SYI		E. Skrzynecki, Poland	1179
SDN		D. Slauson, IA	19
SMI		A. Smith, England	1
SHA		H. Smith, MI	55
SJE		J. Smith, CA	32
SUI		R. Smith, England	412
SKA	16	K. Sokolovsky, Russia	69
SAL		A. Solomon, Ukraine	519
SBX		A. Sonka, Romania	862
SYP		P. Soron, Canada	39
SUG		G. Sostero, Italy	17
SWQ	13	W. Souza, Brazil	84
NUD03		N. Spear, IL	11
SJZ		J. Speil, Poland	2175
SXR	03	M. Sragner Keszthelyi, Hungary	2
SBH		B. Standifer, TN	367
SDB		D. Starkey, IN	9057
SYO		T. Steck, IN	61
STI		P. Steffey, FL	474
SET		C. Stephan, OR	1608
SRB		R. Stine, CA	2231
SOX		C. Stockdale, Australia	657
STQ		N. Stoikidis, Greece	190
SDI		D. Storey, England	69
SFU		M. Streamer, Australia	31
SHZ	02	H. Struever, Germany	34
SRX	14	R. Stubbings, Australia	12173
SUK		M. Stuka, CA	12
SAC	02	A. Sturm, Germany	197
SUQ		A. Sucker, Germany	120
SUS		D. Suessmann, Germany	443
SUH		M. Suhovecky, IN	11
SQC		C. Suslavage, CA	46
SWV		D. Swann, TX	461
SSW		S. Swierczynski, Poland	4549
SYY	03	E. Szabo, Hungary	4
SFX	03	T. Szalai, Hungary	27
SOZ	03	L. Szantho, Hungary	156
SAO	03	A. Szauer, Hungary	173
SXB		M. Szczerba, Poland	2
SLY	03	L. Szegedi, Hungary	12
SYV	03	P. Szekely, Hungary	719
SNO	03	L. Szentasko, Hungary	2
TDY		D. Tandy, AL	2589
TDB		D. Taylor, Canada	2399

Table 3. AAVSO Observers, 2004–2005, cont.

Code	*Org.*	*Name*	*No. Obs.*
TJV	01	J. Temprano, Spain	385
TDI		D. Terrell, CO	6
TTU		T. Tezel, Turkey	24
TBD		D. Thibeault, Canada	135
TJE		J. Thibodeau, OK	252
THR		R. Thompson, Canada	265
THU	01	B. Thouet, France	162
TKK	17	K. Tikkanen, Finland	37
TPE	17	P. Tikkanen, Finland	149
TIA	03	A. Timar, Hungary	18
TOM	04	M. Toonen, Netherlands	1
TSF	18	S. Toschi, Italy	20
TMQ	03	M. Toth, Hungary	3
TOZ	03	Z. Toth, Hungary	3
TSC		S. Tracy, CT	275
TRF		C. Trefzger, Switzerland	161
TJC		J. Truax, MI	6
TRX		R. Truta, Romania	4
TVS		V. Tsamis, Greece	6
TSJ		S. Tsuji, Japan	17
TXA		A. Tudorica, Romania	14
TUC	10	C. Turk, South Africa	67
TYS		R. Tyson, NY	470
VFR	01	F. Vaclic, Czech Republic	93
VLN	01	L. Vadrot, France	205
VST		S. Valentini, Italy	107
VAT		T. Valerio, Italy	311
BVE	04	E. Van Ballegoij, Netherlands	2716
VDL	05	J. Van Der Looy, Belgium	4844
VDE	04	E. Van Dijk, Netherlands	126
VNL	05	F. Van Loo, Belgium	278
VUG	04	G. Van Uden, Netherlands	57
VMT	05	T. Vanmunster, Belgium	37237
VML		M. Varley, MD	2
VED	01	P. Vedrenne, France	9666
VEE	05	S. Ver Eecke, Belgium	106
VET	01	M. Verdenet, France	1912
VIA	01	J. Vialle, France	289
VJA	17	J. Virtanen, Finland	1353
VGK		G. Vithoulkas, Greece	1582
VRM		R. Vivaldi, Italy	6
VMH		M. Vlasov, Israel	2
VFK	02	F. Vohla, Germany	4560
VOL		W. Vollmann, Austria	500
VVC		V. Voropaev, Russia	4
VYV	09	Y. Vovk, Ukraine	20
WGR		G. Walker, MA	4912
WBY		B. Walter, TX	105
WHN	03	H. Walter, Hungary	12
WJX		J. Wan, Australia	2
WPT	10	P. Wedepohl, South Africa	141
WEI		D. Weier, WI	226
WDZ		D. Wells, TX	718
WC		R. Wend, IL	32
WKL		K. Wenzel, Germany	466
WEF		F. West, MD	545
WJD		J. West, KS	125
WRP		R. Wheeler, OK	7
WWS		W. Whiddon, TX	30
WAH		A. Whiting, AZ	110
WJO		J. Wilder, CA	1
WI		D. Williams, IN	1722
WPX	14	P. Williams, Australia	9394
WRX		R. Williams, MI	101
WSN		T. Wilson, WV	434
WWJ		W. Wilson, England	638
WSZ	03	S. Windecker, Hungary	18
WCP		C. Windisch, Germany	187
WBE		B. Winkelman, OK	16
WAS	02	A. Winkler, Germany	203
WKM		M. Wiskirken, WA	14
WUL	02	U. Witt, Germany	82
WRZ		R. Wlodarczyk, Poland	66
WEN		E. Woerner, United Arab Em.	7
WBT		R. Wolpert, CA	3
WJM		J. Wood, CA	21
WPF		P. Wright, MN	53
WUB	04	E. Wubbena, Netherlands	14
YJU		J. Yin, China	93
ZAG	03	G. Zajacz, Hungary	1
ZAD		D. Zak, PA	100
ZFL		F. Zattera, Italy	40
ZPA		P. Zeller, IN	61
ZDM		D. Zhdanok, Russia	2
ZIG		I. Zinchenko, Ukraine	58
ZRE		R. Zissell, MA	702

These codes, which appear in the Table (AAVSO Observers 2004–2005), indicate observers are also affiliated with the groups below:

01 Association Française des Observateurs d'Étoiles Variables (AFOEV)
02 Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV) (Germany)
03 Magyar Csillagàszati Egyesület, Valtózocsillag Szakcsoport (Hungary)
04 Koninklijke Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands)
05 Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium)
06 Madrid Astronomical Association M1 (Spain)
07 Asociacion de Variabilistas de Espagne (Spain)
08 Norwegian Astronomical Society, Variable Star Section
09 Ukraine Astronomical Group, Variable Star Section
10 Astronomical Society of Southern Africa, Variable Star Section
11 Astronomisk Selskab (Scandinavia)
12 Liga Ibero-Americana de Astronomia (South America)
13 Brazilian Observational Network REA
14 Royal Astronomical Society of New Zealand, Variable Star Section
15 Agrupacion Astronomica de Sabadell (Spain)
16 Association of Variable Star Observers "Pleione" (Russia)
17 URSA Astronomical Association, Variable Star Section (Finland)
18 Unione Astrofili Italiani (Italy)
19 Svensk Amator Astronomisk Förening, Variabelsektionen (Sweden)
20 British Astronomical Association, Variable Star Section
21 Israeli Astronomical Association, Variable Star Section
24 Astronomischer Jugendclub (Austria)
27 Royal Astronomical Society of Canada

Table 4. Observation statistics for fiscal year 2004–2005 (see Figures 3, 4, and 5)

Observations (increments of 1000)	*No. Observations per increment*	*% of All Observations*	*No. Observers per increment*
1–999	93052	10%	610
1000–1999	66506	7%	46
2000–2999	55729	6%	24
3000–3999	49183	5%	14
4000–4999	46150	5%	10
5000–5999	27376	3%	5
6000–6999	12592	1%	2
7000–7999	29941	3%	4
8000–8999	8026	1%	1
9000–9999	37995	4%	4
10000+	528752	55%	20