



AAVSO Newsletter

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Message from the President

William G. Dillon

It's wonderful to have a Director again, and it's wonderful that our Director is Dr. Arne Henden, a world renowned observational astronomer with many years of service to the AAVSO through his work on the AAVSO Council and his advice and mentoring of its observers.



At our Spring meeting in Las Cruces, New Mexico, Arne's first as the AAVSO's new Director, I had to remind myself several times that he had only been on the job a few weeks!

I have a great sense of pride in the team that helped the AAVSO get through some stormy seas: in our interim Director Elizabeth Waagen, my fellow officers and Council members, HQ staff, in the welcome advice of Past Presidents Dan Kaiser, Lee Anne Willson, and Tom Williams, and our Search Committee members who brought us such quality candidates. Now we have a new Captain, calm seas, and steady wind to fill the sails. We can now ponder which course we'd like to set, and enjoy the voyage with new-found confidence.

One course we're starting to explore is gaining access for our members to remote telescopes. Thanks to the Internet and software and hardware advances, distance is not a factor anymore in controlling a telescope. It's no longer necessary to haul equipment long distances to image in dark skies, even the dark skies of another hemisphere. Someone else has worked the bugs out of an advanced imaging system, and is responsible for its maintenance. I think this can significantly lower the barriers to getting involved in CCD imaging and photometry.

Thanks to AAVSO Council member Barry Beaman (former President of the Astronomical League), we're in discussions with the AL on gaining part-time access to their remote ISS-AT telescope for our members. Naturally, there are many details to be worked out, and many difficulties to overcome, but I'm excited by the potential this offers us all.

I expect to have more details for you at our October meeting; hope to see you there!

Clear skies and good observing,

—Bill Dillon

From the Director

Arne A. Henden

Welcome to another edition of the *AAVSO Newsletter*! Summer is one of my favorite seasons, as everything botanic has come to life, with flowers and fragrances tantalizing me every step of my walk to work. I have been pleasantly surprised at the number of clear nights in the Boston area, though I've found in my career that most places have more clear weather than their detractors would lead you to believe!

I'd like to give you some highlights since the last Newsletter. Most of these have occurred under the watchful eye of our Interim Director, Elizabeth Waagen, whom I am grateful to have sitting only a few feet from my office. It has been a very active period:

- We passed through the Trials and Tribulations period, from the illness and passing of Janet Mattei, through the inspired leadership of Elizabeth Waagen, to the hiring of a new Director. Hopefully we will be on a steady course for a while, with no more storms!
- The Validation Project was completed, with nearly 10 million observations through the 2001 calendar year checked and placed on-line. The more recent observations are being validated as an ongoing effort.
- Wayne Lowder's 95,000 observations were processed and are now available.
- A.W. Robert's 250,000 South African observations have been nearly digitized and will be available on-line later this year, thanks to the continuing efforts of Boyden Observatory and the Astronomical Society of Southern Africa.
- Approximately 12 million observations have been submitted to the AAVSO International Database.
- Over 3400 requests for AAVSO data have been processed.
- The cataloguing of approximately 60,000 comparison stars on over 4,000 AAVSO charts has been completed by the comparison star database team.
- Hundreds of new and revised charts have been placed on the web.
- A new automated chart plotting program is in preparation, to be released later this year.
- 6 Variable Star of the Season presentations have been created.

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AAVSO Newsletter Production Editor: Travis Searle. Content and photo contributions to this edition from Elizabeth Waagen, Kate Davis, Aaron Price, Matthew Templeton, and the AAVSO Archives.

- A joint meeting, AstroCon 2004, was held among AL, ASP, ALPO, AAVSO, and three local astronomical societies.
- The Third High Energy Astrophysics Workshop was held in Las Cruces, NM.
- The 94th Spring Meeting was held in Las Cruces, NM.
- 133 new members were added to our organization.
- The internet connection was upgraded to 1.5Mbps, tripling our data rate.
- The electronic version of the *JAAVSO* was begun; several issues of the hardcopy journal were printed and distributed.
- Many observing campaigns were held, from studying cataclysmic variables such as Var Her 04 and BZ UMa through exoplanet transit studies of TrES-1.
- Peranso, the premier period-searching software program, was made available at no charge to AAVSO members through an agreement with its author.
- The Thursdays Chat Room was begun.
- Work was begun to incorporate all RR Lyr and Eclipsing Binary observations into the International Database.
- A gamma-ray burst afterglow was discovered by an AAVSO member, and many other afterglows observed by members of the High Energy Network.
- The Janet A. Mattei Research Fellowship Program was created.

Internet Activity and the Web Site

The new web site continues to see increased activity. Kate Davis developed an online store section that has been very helpful in promoting our for-sale items. Over 2 million page downloads occurred during this period, with an increase to 377MB of data per day transferred. An online book auction was held, with the proceeds given to the JAM Research Fellowship fund.

A new observing campaign web page was created by Kate. This page has both a timeline graph at the top indicating what campaigns are in progress, as well as details for each campaign given below.

AAVSO-interest pages were enhanced over the last reporting period, with the addition of a "What's new at HQ" section which includes short staff biographies and pictures as well as directions, a virtual tour of the HQ building, and news items.

Of course, the number of downloaded charts and quick-look accesses continues to increase exponentially.

Observations

Over 700,000 observations have been reported in the last 18 months. These continue to come from both domestic and international observers, with now nearly an equal split between visual and CCD observers.

The top countries continue to be France, Australia, and Belgium. Lew Cook dominated the observers with over 70,000 CCD observations during the period. Many visual observers contributed over 10,000 observations apiece, however, including Mike Simonsen and Rod Stubbings. The quality of data from everyone continues to improve, especially now with the revised charts that are available on the Web.

Publications

In addition to the *JAAVSO* printings mentioned above, we published the 2005 *AAVSO Bulletin* (Predicted Dates of Maxima and Minima of 561 Long-Period Variables), *Alert Notices*, *News Flashes*, *CCD Views*, *Ephemerides for Eclipsing Binaries and RR*

Lyrae Stars, etc. We recently revived *Eyepiece Views* and updated the *PEP Newsletter*. In addition, some 40 journal publications were made with staff assistance or included amateur AAVSO members, including:

- Templeton, M.R., Mattei, J.A., and Willson, L.A., "*Secular Evolution in Mira Variable Pulsations*," 2005, AJ, in press.
- Price, C. A. et al., "*A New Cataclysmic Variable in Hercules*," 2004, PASP 116, 1117.
- Smak, J., and Waagen, E.O., "*The 1985 Superoutburst of U Geminorum. Detection of Superhumps*," 2004, Aca 54, 433.
- Martin, J.C., and Koppelman, M. D., "*Eta Carina's Brightness Variations Since 1998: Hubble Space Telescope Observations of the Central Star*," 2004, AJ 127, 2352.

The GRB Network

The AAVSO High Energy Network now encompasses all variable targets with gamma-ray or X-ray emission, including GRB afterglows, active galactic nuclei, and polars. We have arrangements with the NASA Swift satellite team for gamma-ray follow-ups, and campaigns with the GLAST Telescope Network in support of their upcoming mission. The two major events were the discovery of the fading afterglow of GRB030725 by Berto Monard, the first amateur discovery; and the extremely bright and long-lasting afterglow for GRB030329, which amateurs followed for over a week, contributing valuable photometry for many professional research papers. This network is being strengthened through a grant from Swift, providing CCD cameras for several active observers (especially in the southern hemisphere), and through a grant from the Curry Foundation, providing filters for many of our observers and inexpensive CCD cameras and travel funds to reach developing countries.

Exoplanets

We have begun a collaboration with TransitSearch to study exoplanet systems. While several of these are already known transiting systems (such as HD248959 and TrES-1), TransitSearch is initiating campaigns with our help on some of the other 150 systems, monitoring for any small deviation in brightness that would be indicative of a transit. Detecting a transit is important as it constrains the geometry of the system and gives us the true mass of the planetary body.

Education and Outreach

The Third HEA workshop was videotaped and a DVD of the sessions is in progress. Most of the PowerPoint presentations from this workshop as well as the scientific paper sessions of the AAVSO meetings are available on the Web. The AAVSO educational curriculum *Hands-On Astrophysics: Variable Stars in Math, Science and Computer Education* continues to be distributed through the Astronomical Society of the Pacific and our own online store.

A Mira Companions and Planets Symposium was organized in April 2004 and well attended. Another single-day Symposium is being planned for August 2005 on cataclysmic variables.

Planning is underway for more half-day workshops, with visual observing and IRAF data analysis workshops being given at the Fall 2005 annual meeting. Gamze Menali just attended a meeting of Turkish amateur astronomers that was dedicated to the memory of Janet Mattei. We will be attending the major E/PO meeting being organized by the Astronomical Society of the Pacific in Tucson this September.

Summary

The organization continues to be strong and healthy. We are actively pursuing new grant possibilities to further enhance our research and outreach activities. Internal changes are occurring to improve the efficiency of the staff, effectively increasing the number of people supporting the membership at no cost. By next Newsletter, we hope to report many more exciting enhancements. It is a great time to be a variable-star enthusiast!

—Arne

What's New at AAVSO Headquarters



News and Notes from AAVSO HQ.

The 94th Annual Meeting of the AAVSO! Mark your calendars!

With summer upon us here in Cambridge, we're already thinking about the fall! The **94th Annual Meeting** of the AAVSO is scheduled to take place this **October 14-15** at the Sheraton Hotel in Newton, MA. The preliminary schedule for the meeting includes an open house at AAVSO HQ, two exciting workshops for both visual and CCD observers, scientific paper sessions, and closing night banquet. A formal meeting announcement will be coming soon! For more preliminary information and to book a room visit:

<http://www.aavso.org/aavso/meetings/fall05.shtml>



Let's Talk... AAVSO Thursday Chats

You're invited to join us for AAVSO Thursdays, where the general public is invited to join in an all-day web chat about all things astronomical (but particularly our own variable stars). Meet your fellow members, observers, staff, professionals and anyone else who decides to stop on by!

Every Thursday the chat room will be opened around 00:00UT on Thursday morning and closed around 04:00 UT Friday morning. This should allow those from all over the world to join at their convenience. Stop on by!

<http://www.aavso.org/aavso/chat.shtml>

AAVSO member, observer, and hardworking council member **Gary Billings** has been honored by Andrew Lowe with the naming of asteroid 73703 as "Billings". Our most sincere congrats to Gary for this wonderful honor!

VALIDATION: COMPLETE!

Nearly a Century of Variable Star Data at Your Fingertips!

We are happy to announce the completion of the two-year, NASA-funded project to validate over 9.5 million (mostly visual) variable star observations in the AAVSO International Database from the AAVSO's founding in 1911 through 2001. Thanks to the tireless work of the Data Validation Team, consisting of 8 AAVSO staff members, approximately ten million variable star observations - going back a century or more for some stars and all contributed by over 6,000 amateur astronomers around the world - are available online to the scientific community, giving you immediate access to this treasure trove of historical data. The validated data will also be placed on the NASA/IPAC-IRSA site and in other NASA databases, making the AAVSO data even more widely and easily available for astronomical research, education, and public outreach.

The AAVSO also gratefully acknowledges NASA grant NAG5-12602 for providing funding for the AAVSO Data Validation Project.

Milestones: Elizabeth O. Waagen - 25 Years



AAVSO Staffer Mike Saladyga presents a certificate of recognition to Sr. Technical Assistant Elizabeth O. Waagen in honor of her 25th Anniversary.

Elizabeth began her career with the AAVSO in 1979 after graduating from Smith College in Northampton, MA. She started as technical assistant to Director Janet Mattei and over the next 25 years the variety and number of her responsibilities grew. In addition to her current position as senior technical assistant, she is also associate editor of the *JAASO*, and following Janet's illness, Elizabeth served as the AAVSO's Interim Director.

In honor and recognition of Elizabeth's 25 years of dedication and hard work at the AAVSO—especially as interim director—she was presented with a special certificate by the AAVSO council and staff. Congratulations Elizabeth and Thank You!

Eyepiece Views is back! -After a long hiatus the AAVSO's free online newsletter for visual observing has returned! Eyepiece Views is published bimonthly and is distributed via email and made available on the AAVSO website.

<http://www.aavso.org/publications/eyepieceviews/>



The Janet A. Mattei Research Fellowship Fund

Former AAVSO Director, the late Janet A. Mattei, was dedicated to the union of professional and amateur astronomy worldwide. Following her passing on March 22, 2004 we have received many suggestions on how to memorialize her life and passion for bringing professionals and amateurs, including young amateurs, together in astronomy.

It was decided that a goal worthy of Janet's memory is to continue her work of professional-amateur collaboration. In order to continue fostering the spirit of this collaboration, the AAVSO Council created the Janet A. Mattei Research Fellowship Program. This program will fund a visiting scientist, postdoctoral researcher, or student to visit and perform research at AAVSO Headquarters. The visitor will work with the ever-growing treasure-trove of variable star observations in the AAVSO International Database, with the goal of turning these observations into scientific results disseminated among both the professional and amateur communities through professional journals and informal outlets.



Janet spent her career bridging the gap between amateur and professional astronomers.

Since its inception, the fund has raised over **\$30,000** thanks to your very generous support, and it is still growing. But, for the program fund to remain viable, healthy, and secure, a significant investment is required.

If 1,000 individuals were each to donate \$60 - the same as one year's membership in the AAVSO - we would be able to sustain a visiting position at AAVSO Headquarters for three months per year. We invite you to give as generously as you can to the Janet A. Mattei Research Fellowship Program.

You may donate securely online at

<https://www.variablestars.com/janetfund.shtml>

or you may send a check or money order (US funds) made payable to the AAVSO to: AAVSO, 25 Birch Street, Cambridge, MA 02138 USA. On the check, please be sure to designate that your donation is for the Janet A. Mattei Research Fellowship Program. Remember, all contributions are tax-deductible.

AAVSO Book Auction

Over the years many duplicate books accumulated at AAVSO Headquarters. This winter the AAVSO held a book auction to help raise money for the Janet A. Mattei Research Fellowship. Participants were encouraged to bid on the books either online at our website or by mailing or calling in their bid amounts to HQ.

We're happy to report that the auction was a great success and not only helped us make room for new material at the office but also raised over \$3500 for the Mattei Fellowship. Our thanks to all those who participated and our congratulations to all the winning bidders!



The *Journal of the AAVSO*: Now On the Web!

We are pleased to announce that the *Journal of the AAVSO* (*JAAVSO*) now has its electronic counterpart, the eJAAVSO. It is being posted on the web in response to the Council vote at the Spring 2005 meeting to establish an electronic journal to be edited and published in conjunction with the *Journal of the AAVSO*. Its purpose is to speed and broaden the dissemination of variable star research to the global astronomical community. It will be open to anyone with internet access.

The eJAAVSO can be found at:

<http://www.aavso.org/publications/ejaavso/>

The eJAAVSO will consist of papers that have been refereed, edited, and accepted for publication in the paper edition of the *JAAVSO*. While the electronic version does not constitute formal publication, authors may reference its articles with the notation "J. Amer. Assoc. Var. Star Obs., inpress."

Research papers accepted by the *JAAVSO* and selected for early distribution in the eJAAVSO will be posted, as soon as they become ready, with their dates of receipt, revision (if required), and acceptance. When posted papers appear in the paper version, they will be indexed by the NASA Astrophysics Data System.

The eJAAVSO web site will also provide on-line access to published *JAAVSO* volumes. These will be posted to the web site as time allows.

Awards and Recognition

The Director's Award

The Director's Award is awarded at the Director's discretion in the form of a plaque to an outstanding observer who contributes to special observing projects. The most recent recipients are:

2005 - Presented at the 94th Spring Meeting in Las Cruces, NM:

Michael A. Simonsen
of Imlay City, Michigan, USA

...for valuable contributions of variable star observations during campaigns in support of professional ground-based and satellite programs, and a cumulative total of nearly 42,000 visual observations contributed to the AAVSO International Database since 1998...



Longtime Member/Observer Mike Simonsen (L) shows off his award with AAVSO Director Arne Henden.

2004 - Presented at the 93rd Spring Meeting in Berkeley, CA:

Christopher Stephan
of Coos Bay, Oregon, USA

...for his dedicated contributions since 1973 to special observing programs and the AAVSO International Database, for his inspiring and mentoring of new observers, and his astronomy education efforts, particularly for young people.

Arto Oksanen
of Muurame, Finland

... for his meticulous CCD high-speed photometry of objects whenever possible, providing vital contributions to special observing programs and the AAVSO International Database, and for his outreach and mentoring of new CCD observers in his native Finland.

Solar Observer Awards

Solar Observer Awards are certificates presented to solar observers who have reached milestones of 1000, 1500, and 2000 sunspot observations. In 2004 a new SID awards program was put in place that will allow SID observers to get recognition for their efforts. In recognition of outstanding solar division contributions, the most recent solar observer awards were presented to:

Presented at the AAVSO 93rd Annual Meeting, Waltham, Massachusetts, October 30, 2004:

SID Awards

<i>Name</i>	<i>Country/State</i>
Jerry Winkler	Texas
Danny Overbeek*	South Africa
Dominic Toldo	South Africa
James Ellerbe	Spain
Alex Panzer	Ohio
Walter Moos	Switzerland
Michael Hill	Massachusetts
Michael King	United Kingdom
Guglielmo DiFillipo	Italy

* awarded posthumously

Observers added to the 1500 Sunspots Club

<i>Name</i>	<i>Country/State</i>
Robert P. Branch	California
Brenda Branchett	Florida
Thomas A. Cragg	Australia
German Moralez Chavez	Bolivia
Javier Jarboles Maranon	Spain

GRB Award

This year the AAVSO proudly presented the very first GRB Discovery Award. This plaque is awarded for the discovery of a gamma-ray burst optical afterglow by an amateur astronomer. The award was announced at the 93rd Annual Meeting of the AAVSO in Waltham, Massachusetts, on October 30, 2004. The first ever recipient of the AAVSO GRB Discovery Award is:

Libert (Berto) A. G. Monard
for the discovery of
the Gamma-Ray Burst optical afterglow
of
GRB 030725

July 25.79, 2003 UT

Observer Awards

Without the nightly observations of amateur astronomers, the professional astronomer would find it difficult, if not impossible, to collect the quantity of data that is needed to further the study of stars, the Sun, novae and supernovae, comets and meteors. Variable star observers who contribute their observations to the AAVSO constitute the foundation of our organization and their observations comprise the AAVSO International Database.

The Observing Achievement Award is a certificate presented to those observers who have submitted to the AAVSO 10,000, 25,000, 50,000, 100,000, or 250,000 visual observations and 1,000, 2,500, 5,000 or 10,000 Photoelectric and CCD observations.

Presented at the AAVSO's 93rd Spring Meeting Berkeley, California, July 20-24, 2004

OVER 100,000 OBSERVATIONS

Gary Poyner	England	1991-2003	106,713
Georg Comello	Netherlands	1966-2003	105,865

OVER 50,000 OBSERVATIONS

Albert F. Jones	New Zealand	1960-2003	63,766
Lewis M. Cook	USA	1974-2003	58,332
Glenn F. Chaple, Jr.	USA	1980-2003	54,527
Kenneth J. Medway	England	1973-2003	50,743

OVER 25,000 OBSERVATIONS

Michael Simonsen	USA	1999-2003	34,278
Shawn W. Dvorak	USA	1981-2003	30,807
Richard Huziak	Canada	1980-2003	29,254
Johan Van Der Looy	Belgium	1991-2003	29,143
A. Patrick Abbott	Canada	1982-2003	26,945
Robert A. James	USA	1953-2003	26,281
Stanislaw Swierczynski	Poland	1991-2003	25,508
Peter Williams	Australia	1989-2003	25,047

OVER 10,000 OBSERVATIONS

Peter Nelson	Australia	1990-2003	15,632
Hubert Hautcler	Belgium	1999-2003	13,831
Adrian Bruno Sonka	Romania	1999-2003	11,893
Janos Fekete	Hungary	1988-2003	11,527
Charles Robertson	USA	2001-2003	11,182
Matyas Csukas	Romania	1987-2003	11,149
Arto Oksanen	Finland	2001-2003	10,984
Richard P. Harvan	USA	1979-2003	10,264
Barry B. Beaman	USA	1964-2003	10,064
Robert P. King	USA	1983-2003	10,020

OVER 50,000 PEP OR CCD OBSERVATIONS*

Lewis M. Cook	USA	1974-2003	51,962 CCD
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OVER 25,000 PEP OR CCD OBSERVATIONS*

Ronald E. Zissell	USA	1985-2003	26,588 CCD
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OVER 10,000 PEP OR CCD OBSERVATIONS*

Peter Nelson	Australia	1990-2000	313,133 CCD
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Robert A. James	USA	1953-2003	13,058 CCD
Charles Robertson	USA	2001-2003	11,182 CCD
Arto Oksanen	Finland	2001-2003	10,984 CCD

OVER 5,000 PEP OR CCD OBSERVATIONS*

Neil D. Butterworth	Australia	2002-2003	9,326 CCD
Christopher W. Hesseltine	USA	1975-2003	7,316 CCD

OVER 2,500 PEP OR CCD OBSERVATIONS*

Thomas Michalik	USA	1994-2003	2,701 CCD
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OVER 1,000 PEP OR CCD OBSERVATIONS*

Maciej Reszelski	Poland	2000-2003	1,617 CCD
Petri Tikkanen	Finland	2001-2003	1,529 CCD
Neil A. Simmons	USA	1983-2003	1,312 CCD
Mika Aho	Finland	2001-2003	1,265 CCD
Louis B. Cox	Canada	1983-2003	1,112 PEP
Mark J. Munkacsy	USA	1997-2003	1,000 CCD

Presented at the AAVSO's 94th Spring Meeting, Las Cruces, New Mexico, March 25-26, 2005

OVER 100,000 OBSERVATIONS

Lewis M. Cook	USA	1974-2004	121,326
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OVER 50,000 OBSERVATIONS

Eddy Muylaert	Belgium	1986-2004	64,774
Tonny Vanmunster	Belgium	1976-2004	54,744
Frank Vohla	Germany	1990-2004	52,897
Harald Marx	Germany	1969-2004	50,891
Attila Kosa-Kiss	Romania	1976-2004	50,798
Sandor Papp	Hungary	1983-2004	50,410

OVER 10,000 OBSERVATIONS

Neil D. Butterworth	Australia	2002-2004	18,351
Thomas J. Richards	Australia	1992-2004	15,166
Eric Morillon	France	1988-2004	12,101
Wolfgang Kriebel	Germany	1989-2004	11,866
Istvan Kovacs	Hungary	1981-2004	10,834
Christopher W. Hesseltine	USA	1975-2004	10,710
Alexandre Amorim	Brazil	2000-2004	10,250
Erwin Van Ballegoij	Netherlands	1984-2004	10,228
Tom Kracji	USA	2002-2004	10,207
Etsuiku Mochizuki	Japan	1964-2004	10,000

OVER 100,000 OBSERVATIONS PEP/CCD*

Lewis M. Cook	USA	1974-2004	114,956 CCD
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OVER 50,000 OBSERVATIONS PEP/CCD*

Gerard Samolyk	USA	1975-2004	50,182 CCD
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OVER 25,000 OBSERVATIONS PEP/CCD*

Shawn W. Dvorak	USA	1981-2004	31,771 CCD
Tonny Vanmunster	Belgium	1976-2004	25,080 CCD
Robert A. James	USA	1953-2004	25,078 CCD

OVER 10,000 OBSERVATIONS PEP/CCD*

Neil D. Butterworth	Australia	2002-2004	18,351 CCD
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Thomas J. Richards Australia 2004-2004 15,091 CCD

OVER 5,000 OBSERVATIONS PEP/CCD*

Tom Krajci USA 2002-2004 8,112 CCD
 Michael Koppelman USA 2001-2002 5,116 CCD

OVER 2,500 OBSERVATIONS PEP/CCD*

David Boyd England 2003-2004 4,661 CCD
 David P. Messier USA 2003-2004 4,165 CCD
 Keith A. Graham USA 1981-2002 3,875 CCD
 Mark J. Munkacsy USA 1997-2003 3,519 CCD
 Charles Pullen USA 1999-2002 3,480 CCD
 Gary Walker USA 1994-2002 2,786 CCD

OVER 1,000 OBSERVATIONS PEP/CCD*

Liebert S. Africa 1992-2004 2,668 CCD
 (Berto) Monard
 Alexandru Corlan Romania 2001-2004 2,420 CCD
 Radu Corlan Romania 2001-2004 2,405 CCD
 Walter J. MacDonald II Canada 1982-2004 2,267 CCD
 Michael Nicholas USA 2001-2004 1,818 CCD
 Stephen E. Robinson USA 2001-2004 1,813 CCD
 Scott Jamieson USA 2001-2004 1,434 CCD
 Bernard Heathcote Australia 2002-2004 1,366 CCD
 William J. Aquino USA 2000-2004 1,348 CCD
 Arne A. Henden USA 2000-2004 1,291 CCD
 Gary W. Billings Canada 2000-2004 1,266 CCD
 Bruce L. Gary USA 2001-2004 1,249 CCD
 Ronald R. Royer USA 1954-2004 1,035 CCD

** Years include total AAVSO observing interval (not only PEP/CCD observing). Total includes PEP and/or CCD observations only (not observer's visual contributions).*

**The 2004 AAVSO Symposium
 on Mira Companions & Planets**

April 26, 2004
 Harvard-Smithsonian Center for Astrophysics (CfA)

The AAVSO held the first of what we hope are annual one-day symposia on variable star topics. Among the goals of these symposia is to increase awareness of your observational data among the professional community and to share the latest in professional research with the observers.

Our inaugural symposium was MC'd by AAVSO past-president Dr. Lee Anne Willson. Speakers and topics presented were:

- * Dr. Wesley Traub (CfA), "*The Mira Imaging Project: Near-IR, VLBA, and Thermal-IR*"
- * Dr. Margarita Karovska (CfA), "*Miras and Their Companions*"
- * Dr. Lee Anne Willson (Iowa State), "*Planets in Mira winds - models, some detection limits, and the fates of the planets in our solar system.*"
- * Dr. Matthew Templeton (AAVSO), "*Mira Data in the AAVSO International Database.*"

All of the talks were recorded and digitized by AAVSO observer and member Richard Kinne. They are available for download in Quick Time (.MOV) format along with the PowerPoint presentations by each speaker at this URL: <http://www.aavso.org/aavso/meetings/mira2004.shtml>

The AAVSO extends its most sincere sympathy and condolences to the families, friends, and colleagues of the following members, colleagues, and friends who have passed away since the publication of the previous *Newsletter*.

Janet A. Mattei
 Littleton, MA

As most already know, former AAVSO Director Janet Mattei passed away March 22, 2004 after valiant fight with acute leukemia. Janet served as AAVSO Director for 30 years and was dedicated to the union of professional and amateur astronomer collaboration worldwide. Through Janet's tireless leadership, the AAVSO evolved to meet many new challenges and has continued to prosper, thanks to her guidance. We remain enormously proud of Janet and are forever grateful for her inspiring devotion to the AAVSO, its members and observers, and to variable star astronomy. Janet leaves behind her personal legacy of striving for excellence, dedication, and compassion.

Fred Whipple
 Cambridge, MA

A pioneer in comet research, Fred Whipple began work at the Harvard College Observatory in 1931 and from 1955 to 1973 directed the Smithsonian Astrophysical Observatory, helping it to become the renowned Harvard Smithsonian Center for Astrophysics.

Phillip Morrison
 Cambridge, MA

A renowned and beloved Massachusetts Institute of Technology (MIT) theoretical astrophysicist, Morrison became widely known for his research and professional contributions in quantum electrodynamics, nuclear theory, radiology, isotope geology and, since the 1950s, in cosmic-ray origins and propagation, gamma-ray astronomy and other topics in high-energy astrophysics and in cosmology.

Noel Peattie
 Winters, CA

Noel began variable star observing in 1969, and contributed 1,569 observations to the AAVSO through October 2003. He was a librarian, publisher, and a successful poet and author whose works are still available.

Hans Sorensen
 Denmark

A longtime observer of the Danish group Astronomisk Selskab, Hans began submitting observations to the AAVSO in 1998, and throughout 2001 he contributed 1,538 observations, nearly half of the PEP.

Dorothy Beetle-Pillmore
 Fort Collins, CO

Dorothy developed a lasting interest in natural history and astronomy at a young age. She pursued many interests and professions and received a bachelor's degree in paleontology and a master's degree in botany. In 1963, Dorothy took a job in Charlotte, N.C., at the Children's Nature Museum, where she became the director of the planetarium. Subsequently, she directed planetariums in Newport News, Va., Cincinnati, Ohio, and Columbus, Ga., before retiring in 1984.

James G. Baker
 Bedford, NH

An astronomer who designed powerful lenses and cameras for the U-2 spy plane in the 1950's, Baker became a pioneer of satellite reconnaissance in the cold war. Baker also worked to improve the accuracy of telescope optics and designed the Baker Super-Schmidt camera to photograph meteors. With George Z. Dimitroff, he wrote the 1945 book "Telescopes and Accessories."

AAVSO Meetings

The 93rd Spring Meeting of the AAVSO/ASTROCON Berkeley, CA July 20-24, 2004

AstroCon 2004, An Exciting Event

The AAVSO held its Spring 2004 meeting in conjunction with the AstroCon 2004 event in Berkeley, California. AstroCon was a combined meeting hosted by the AAVSO, the Association of Lunar and Planetary Observers, the Astronomical Society of the Pacific, and the Astronomical League. What a fun event this was. I personally enjoyed seeing many of my AAVSO friends again, and meeting many new ones. Of course, we dearly missed Janet.

I was fortunately blessed to be able to attend the event as a representative of Hardin Optical in Bandon, Oregon, where I am employed. I didn't just feel like a vendor at the event. I was able to attend several of the meetings. My colleagues from Hardin covered the booth so I could attend most of our AAVSO sessions, for which I am thankful.

We had a great turn out in attendance for the AAVSO sessions. Elizabeth did a fine job of moderating. I am truly impressed by the fine job she has done as Interim Director. Talks were given on many different topics concerning variable stars. We were given updates as to things happening at HQ. Our President updated us on the Search Committee for the new Director. The New Chart Committee has done a commendable job in getting the observers current charts. Quite a good discussion took place concerning the JAAVSO and trying to get it out to the members a bit more often. I felt this was very fruitful, because just a month or so later, HQ sent out two issues to the members.

Several field trips were taken. One was to Lick Observatory. This trip will always be in my memory. What a historical place this is as far as astronomy goes. The staff took us on a great tour of the grounds, the buildings, and treated us to a lovely outdoor dinner. The weather was absolutely perfect. We got to see the 120 inch



The Lick Observatory

reflector up close. The real treat was getting to observe with the 36-inch Clark reflector. We looked at M13 and a nice NGC nebula. I could just "feel" the history in that old observatory. I could close my eyes and picture astronomers of old, like Barnard, observing with this telescope. Phil Plante and I tried in vain to



The USS Hornet

see the green flash on the setting sun as it set near San Francisco Bay in the distance.

Another field trip was to Chabot Science Center in Oakland. Unfortunately, I missed this trip, but I heard it was very good. The climax of AstroCon was the banquet aboard the USS Hornet, the aircraft carrier that retrieved the Apollo 11 astronauts, and others. Alan Bean was the keynote speaker. Alan was on the Apollo 12 mission. The event aboard the Hornet marked the 35th anniversary of Apollo 11. The awards banquet was a combined banquet of all four astronomy organizations. I was honored to receive from Elizabeth the AAVSO's Director's Award along with Arto Oksanen from Finland. This was a complete surprise to me and I will always cherish this award.

AAVSO meetings are not just scientific meetings. They are a place to build friendships. The AAVSO members are spread out world wide, yet we have a real camaraderie. I know I do not get to AAVSO meetings often, but when I do, it is worth the effort.

Chris Stephan (SET)

Robert Clyde Observatory
Coos Bay, OR

93rd Annual Meeting and Day to Honor Janet Mattei Waltham, MA October 29-30, 2004

The First of a New Generation

Having my first AAVSO meeting be the Memorial Meeting for the venerable Dr. Janet Mattei turned out to be a much more personal experience than I had expected. Never before had a scientific meeting been so moving, so varied, and so full.

I had arranged to attend the meeting a month or so beforehand, when the AAVSO first announced it. HQ staff member Aaron Price graciously offered to let me stay with him and his wife if in return I brought a video camera to film the meeting as I had during the Mira Symposium during the Spring.

My co-workers were both shocked and amused by my plans to attend the meeting. You'll doubtless remember at the time the Boston Red Sox were playing for the championship - something they had not won in over 80 years. "You're going to Boston for an astronomical conference?" they would say, aghast. Truth is I wouldn't go for baseball alone. (The only recognized sport I follow to any degree is English football.)

I arrived in Boston on Thursday afternoon. Boston might be called the "Vatican City" of Unitarian-Universalism, and I wanted to take the opportunity to visit some of the related sites in Boston. Someone was on my side when I found on-street parking not more than a kilometer east of Beacon Hill. I got to visit the UUA Headquarters, see the Robert Shaw Memorial, and walk on the Boston Common (those Boston Common Squirrels are brave!). As I walked around the city, I was struck by all the huge banners that were hung all over celebrating the Red Sox victory. One such banner nearly covered the entire front of the State House! For a team that hadn't won a championship in over 80 years, it seemed these banners must have been made up beforehand. Now that's faith!

I stayed in Boston until 5:30pm, stupidly thinking that I could

let the rush hour pass. I couldn't, but I was able to get out of Boston and onto the highway with only two taxi cabs trying to kill me. I figured that was an accomplishment of sorts. After an hours travel, I finally arrived at Aaron's flat.

Aaron and I had been graduate students together at Swinburne. This was the first time I'd meet his wonderful wife Erma, as well as their cats. Erma, the cats, and the flat turned out to be as charming as I'd imagined. Aaron, being the computer technologist he is, as well as an astronomer, had a WiFi connection in the flat that allowed the both of us to troll the internet while spending the next few hours discussing minute details of the closely upcoming US Presidential election, something both of us were rather passionate about.

The following day, Friday, featured the Memorial service and symposium on Variable Stars in Education in honor of Janet Mattei. This was the second memorial I had attended in the past year. My foster Mom had died in February and we'd had her memorial in April. Half of Rome, NY, turned out. More people came to the memorial than had come to any of my foster sisters' weddings. My foster Mom had taught so many kids in Rome over the years. I had similar feeling as I sat at Janet's memorial service. People had come from all over to honor and remember someone who had the ability to change people's lives simply due to her day-to-day interactions.

I don't need to list and go on about Janet's honors here. I am ill-equipped to even begin to relate what she meant to people who'd known and worked with her for years. But as an "outsider" seeing the Memorial I got the strong impression that the world would be a far, far better place if there were more Janet Matteis in it. No one is perfect, but as I heard things related through the next two hours I knew that Janet was the type of co-worker, mentor, and boss I wish I could have.

During the get together at AAVSO Headquarters that evening I told both Elizabeth and Aaron that I thought they and the current AAVSO staff and Council had an awesome responsibility. The world, starting with new members like me, would get to know Janet through them. That was something to think about. Everyone has things they regret in their life. Honestly, one of mine will be that I never got to meet Janet, based on everything I've heard about her. But I'm grateful that I'm able to do the next best thing: get to know her through her best representatives - her staff and fellow astronomers.

Right after the memorial, the symposium, was held. Aaron kept telling me over and over again that this was a "small" meeting and I kept looking at a whole afternoon of papers and not believing him. All of the presentations had some aspect of Janet involved in them, either as a research subject she was interested in or had participated in, or as a program she'd helped foster. Stories abounded about how Janet would rope colleagues into various projects. What might have been just a stray comment made one evening would, a month later, lead to Janet on the phone saying, "I found funding! Let's start!" If it had something to do with education and public outreach or pro-am efforts, it was never an idle comment to Janet!

Saturday was a "free day" for most of us, although it was a marathon session for the AAVSO Council. While they debated through the morning and afternoon, Aaron, Erma, and Pamela Gay, who I would find a rather interesting connection to that night, decided to brave the vast crowds and potential riot control and tear gas and see the Red Sox victory parade.

Erma had gone ahead and Aaron and Pamela were going to drop me off at the hotel to meet AAVSO Post-Doc Matt Templeton.

As we were driving, Aaron's cell phone rang. He answered it: "Hi Erma... We're on our way... You can't get across the street? OK, don't worry about it. We'll find you." Aaron hung up.

"What's up?" I asked.

"Erma can't get across the street. She's on the south side of the parade route. We're on the north side."

"I didn't know you guys had another car."

"We don't," responded Aaron. "She's on foot."

"Wait a second. They won't let her cross the street?"

"No, Doc. You don't understand. There are so many people there she simply can't cross the street."

It boggled my mind.

Aaron and Pam let me off at the hotel, picked up a couple of other people, and drove off. "Have fun at the tear gassing," I said with a grin as I waved them away.

Matt arrived and even though it was drizzling we decided to do a tour of Lexington and Concord. This was great for me since I'd spent my childhood at the Revolutionary War fortification Ft. Stanwix in Rome, NY. We spent the afternoon tromping over battlefields, looking at displays, and seeing historical short films. Most folks not in New England think of the entire eastern seaboard of the country as built up. Matt was able to bring me through areas of near total wilderness as far as I'm concerned, certainly nothing that I expected anywhere near Boston.

The AAVSO membership meeting convened in the early evening. It was a short (perhaps too short given all the things the AAVSO does!) meeting that still had its areas of humor. Chuck Pullen, one of the AAVSO Council members, did a good job of teasing our organizers as the meeting began.

"We'll be meeting in the lobby after the meeting to go out for pizza," Rebecca announced.

"Which lobby?" Chuck asked.

"The one at the front of the hotel."

"Which corner of the lobby?" Chuck persisted in trying to nail down the precise details.

"I'm not talking to you anymore," Rebecca said with a smile.

After the meeting and some wonderful presentations to members of the AAVSO staff who'd been serving the membership for several years, it was off for a late dutch treat dinner. Ours turned out to be a sort of Swinburne University class reunion since Chuck Pullen, Aaron Price, and I were members of the same class a couple of years ago. Also with us was Pamela Gay who was an instructor at the University.

As we ate and talked I kept looking at Pamela's nametag and listening to her talk of her various experiences. I remembered her from someplace. But, she talked of working at Yale, and I knew I didn't have anyone at Swinburne who worked at Yale. Then, as the conversation went on she mentioned that she'd gotten her Ph.D. just a year or so ago from Texas. That finally stopped me in my tracks.

While I'd been at Swinburne I'd done a project to do age analysis via photometry on the M92 Globular Star cluster. It was quite a challenging project for me, a real learning experience and everything that I'd hoped grad school would be. I particularly remembered how great my advisor had been in trying to help out with computer software issues vis-a-vis the analysis software I'd wanted to use. I'd told anyone who would listen about this project because it meant so much to me. And suddenly it hit me.

"Pam," I asked. "Wait a minute. You just got your Ph.D a year or so ago?"

"Yeah."

“From Texas?”

“Yeah.”

“Were you teaching at Swinburne when you were working on your Ph.D thesis?”

“Uh huh.”

“Oh my God! Pam! It’s me! It’s Doc Kinne, the kid who wanted to do the M92 photometry analysis by hooking up an X-Windows session to your computer in TX from Ithaca, NY! You finally convinced me to forget about it since I’d spend more time on the computer issues than the photometry!”

“Oh my God!” she replied. “I’ve been looking at your nametag all night wondering where I knew you from!”

“Aaron!” I yelled down the table. “This is Pam, my M92 Globular Cluster advisor!” I was acting as though I had just been reunited with a long lost sister! Meeting Pamela made my night.

Janet was fond of saying that each variable star observation had a person behind it, and she liked to imagine each person’s excitement and pride each time they made an estimation. While I never got the chance to meet her, at that moment I like to imagine Janet looking down at our little dinner gathering that night and saying, as she hung out around the orbit of Mira, “Yep, he gets it. MyAAVSO’ers are doing a great job.”

And I think we are.

Richard C.S. “Doc” Kinne (KQR)

Ithaca, NY

94th Spring Meeting and 3rd HEA Workshop

Las Cruces, NM March 20-26, 2005



A radio antenna at the Very Large Array (VLA) with AAVSO’ers underfoot..

High Energy in New Mexico

Where could one go in late winter to enjoy nice weather, and the company of astronomers from all over the world? Where could one learn cutting edge information about the NASA Swift and GLAST missions, blazars, GRB’s, AGN’s, magnetars, and black holes? Where could one sit in on CCD photometry workshops, enjoy a poster paper session about outreach activities, and take a tour of the VLA? This past March the place to be for all this and more was the AAVSO HEA 3 Workshop held at the University of New Mexico campus in Las Cruces, NM. Rarely does one attend a meeting that is so well organized; Aaron, Rebecca, and Elizabeth really did a wonderful job!

The days and evenings were filled with sessions packed with highly detailed information about members of the high-energy astrophysics zoo, given by professional astronomers who were more than happy to answer questions and continue to discuss their topics after hours. I am now anxious to learn the future chapters in the stories of magnetars, AGN’s, GRB’s, and blazars! Tuesday night was highlighted by Phil Plait, who educated and entertained us all with his, “Seven Ways a Black Hole Can Kill You.” If you have never heard Phil speak, you have certainly missed out! His presentation, filled with both verbal and visual jokes, (and sometimes obscure facts), culminating with a cartoon of Ren and Stimpy going into a black hole was superb! Phil’s information on black holes has kept me from figuratively falling into one when asked about black holes at public events. Unfortunately, the star party scheduled to follow was affected by the bane of all visual observers: clouds and lights from the baseball field!

This meeting was my first contact with the AAVSO. I had no idea what to expect when I arrived, but very soon I was highly impressed by the professionalism, infectious enthusiasm, and willingness of the members to make me welcome and to educate me about variable star observing. Professional astronomers, new observers, and those who have made tens of thousands of observations took the time to talk to me about their work and to share their love of variable stars. In spite of the full schedule, there was plenty of time to share jokes, talk about telescope equipment, and make new friends. Star maps and personal observing logs were shared with me. My neophyte questions were answered with patience, humor, and enthusiasm. I was truly overwhelmed by the response to my poster paper presentation, which dealt with my outreach activities in northeastern Oklahoma. I was given materials, ideas, and lots of moral support for my outreach efforts. But for me, the best part of the meeting was the opportunity to talk with other astronomers, both professional and amateur, and the willingness of all to share their knowledge and ideas. It is not everyday that one can mingle with astronomers from the US, UK, Finland, Canada, and South America! I am happy to say that HEA 3 inspired me greatly, and as a result, I have joined the AAVSO and plan to begin learning to make observations soon.

I have one question; Aaron, Rebecca, and Elizabeth, when and where are you going to do another great workshop like this? You can sign me up for it now!

Neta Apple

Chouteau, OK

Fun (in the New Mexico) Sun

On Thursday March 24th the AAVSO officially kicked off it’s 94th Spring on the heels of the very enjoyable and successful 3rd HEA Workshop for Amateur Astronomers. Attendees boarded buses and headed up to the plains of San Agustin, some fifty miles west of Socorro, New Mexico and nearly 7,000 feet above sea level, to visit one of the world’s premier astronomical radio observatories, the Very Large Array or VLA.

The VLA consists of 27 radio antennas in a Y shaped configuration. Each antenna is 25 meters (82 feet) in diameter. The data from the antennas are combined electronically to give the resolution of an antenna 36km (22 miles) across, with the sensitivity of a dish 130 meters (422 feet) in diameter. The visit consisted of a

video and a talk given by a VLA staff member in the visitor center theater followed by a walking tour of the site, including the control building and control room. Attendees braved the wind and ventured out to gaze at the antennas up close, a truly impressive sight!

The first scientific paper session held on Friday March 24th and as usual were filled with some great papers and poster papers on topics ranging from Gamma Ray Bursts and X-ray transients to Period changes in delta SCuti stars. A complete list of abstracts presented at the meeting is available on the AAVSO website at <http://www.aavso.org/aavso/meetings/spring05aavso-present.shtml>.

Friday evening featured a talk given by Dr. Reta Beebe, a professor at New Mexico State University. Dr. Beebe manages the Atmospheres Discipline Node, a part of NASA's Planetary Data System and she spoke about her research involving NASA's Planetary Exploration program. Following the on-campus talk, attendees were invited to join members of the Astronomical Society of Las Cruces (ASLC) for some observing.

Saturday began with the AAVSO membership meeting which included reports the Secretary, Treasurer, Committee Chairs, and also featured the Director's Welcome from new AAVSO Director, Dr. Arne Henden. The second second paper session took place that afternoon.

The Banquet was held at the Hilton Las Cruces on Saturday evening. After dinner the AAVSO awards presentations got underway. For a complete list of awards that were announced check out page __ of this Newsletter. Following the awards, AAVSO's own Elizabeth Waagen described her recent trip to New Zealand to represent the AAVSO at the celebrations honoring Dr. Frank Bateson on his retirement as the founding and sole Director of the Variable Star Section of the Royal Astronomical Society of New Zealand, the section he founded in 1927.

The meeting was well attended and New Mexico proved to be a perfect backdrop for a full and exciting Spring Meeting!

* * *

MISFORTUNES AS BLESSINGS INDISGUISE

Senior Research Astronomer
Emeritus Yale University, and
Director Emeritus, Maria
Mitchell Observatory

The Story of My Life
by Dorrit Hoffleit

\$25.00 (\$21.00 for AAVSO members) plus \$5 U.S. shipping (\$10 others).
(check, money order, and Mastercard/Visa credit cards accepted).

Autographed Copies Available

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What was happening at the AAVSO in 1931? Would you like a new navy polo shirt with the AAVSO logo on it? How about a printed light curve, GCVS Volume III, or a back issue of the *JAASO*? Would you like to read Dorrit Hoffleit's autobiography or learn more about the history of women in astronomy? All of these items plus **so much more** are now available from the AAVSO's Online Store. The store features a new streamlined shopping approach, pictures for every item, size charts, and up-to-date inventory listings. Now that everything is located in one place, ordering from the AAVSO has never been easier!

Simply visit <http://www.aavso.org/store/>, shop around and then checkout on our **secure** server. Members receive discounted prices on most items, so show your AAVSO pride and order something today!

New Data Analysis Software

In the last year we have released some new software packages for data analysis:

***Magplot:** MagPlot is a Windows-based tool for analysing light curves of variable stars. It plots simple light curves which can be manipulated by the user and also performs some basic data analysis routines such as polynomial fitting and averaging. MagPlot supports data downloaded via the AAVSO International Databases download data form on our web site. This is the perfect tool for use in getting started in data analysis.

***WinWWZ:** This is a new Windows-based version of our WWZ program used for looking for period and amplitude changes in variable star data. This version has an easy point 'n click interface which displays full color plots of your results and also supports data downloaded from our web site.

A Fortran version of WWZ (along with its sister program TS) is also now available.

We would like to thank Len Abbey for writing MagPlot and Geir Klingenberg as the primary author of WinWWZ. Dr. Matthew Templeton is responsible for the Fortran versions of WWZ and TS. We also acknowledge a grant from the American Astronomical Society's Small Research Grant Program.

Want to Know How Your Observations are Being Used?

In July we began e-mailing monthly reports to observers which summarize how often their observations have been included in data requested from the AAVSO web site. The reports detail which data were requested, by whom, and for what purpose. A sample is below:

STAR	REQUESTER	USE
AL COM	Amateur Astronomer	other
U GEM	Student	science project
SS CYG	Professional Astronomer	basic analysis
U AUR	Student	correlate
OMI CET	Amateur Astronomer	data analysis

For more information on these reports and to sign up to receive them visit: <http://www.aavso.org/data/datausage.shtml>

AAVSO 2003-2004 Observer Totals Summary

Table 1. AAVSO Observer Totals 2003–2004 by Country

<i>Country</i>	<i>No. Observers</i>	<i>No. Obs.</i>	<i>Country</i>	<i>No. Observers</i>	<i>No. Obs.</i>
ARGENTINA	2	851	JAPAN	5	2,626
AUSTRALIA	27	53,889	MALTA	1	117
AUSTRIA	2	763	NETHERLANDS	12	11,242
BELARUS	2	129	NEW ZEALAND	2	5,788
BELGIUM	16	56,512	NORWAY	7	2,521
BRAZIL	9	4,265	PERU	1	20
CANADA	42	24,588	POLAND	24	13,312
CHILE	2	334	PORTUGAL	5	6,982
CZECH REPUBLIC	1	64	ROMANIA	12	17,645
DENMARK	3	148	RUSSIA	10	1,721
ENGLAND	20	28,725	SLOVENIA	1	355
FINLAND	10	5,937	SOUTH AFRICA	12	5,077
FRANCE	34	27,121	SPAIN	30	6,635
GERMANY	35	20,462	SWITZERLAND	4	357
GREECE	6	2,008	TURKEY	1	9
HUNGARY	86	27,215	UKRAINE	24	2,651
INDIA	2	37	USA	275	197,911
IRELAND	4	311	VENEZUELA	1	15
ISRAEL	2	150			
ITALY	23	6,195	TOTAL	755	534,688

Table 2. AAVSO Observer Totals 2003–2004 USA by State or Territory

<i>State</i>		<i>No. Observers</i>	<i>No. Obs.</i>	<i>State</i>		<i>No. Observers</i>	<i>No. Obs.</i>
ALABAMA	(AL)	3	155	NEVADA	(NV)	1	7
ARIZONA	(AZ)	14	6,005	NEW HAMPSHIRE	(NH)	2	735
CALIFORNIA	(CA)	35	69,966	NEW JERSEY	(NJ)	1	7
COLORADO	(CO)	8	541	NEW MEXICO	(NM)	8	12,851
CONNECTICUT	(CT)	9	6,171	NEW YORK	(NY)	15	5,450
FLORIDA	(FL)	7	8,600	NORTH CAROLINA	(NC)	1	3
GEORGIA	(GA)	4	89	NORTH DAKOTA	(ND)	1	5
HAWAII	(HI)	2	2,559	OHIO	(OH)	9	506
ILLINOIS	(IL)	15	7,796	OKLAHOMA	(OK)	3	420
INDIANA	(IN)	9	8,460	OREGON	(OR)	4	2,255
IOWA	(IA)	2	2,828	PENNSYLVANIA	(PA)	7	815
KANSAS	(KS)	3	2,535	PUERTO RICO	(PR)	3	60
KENTUCKY	(KY)	1	116	RHODE ISLAND	(RI)	3	2,644
LOUISIANA	(LA)	4	193	TENNESSEE	(TN)	4	183
MAINE	(ME)	3	2,614	TEXAS	(TX)	20	2,541
MARYLAND	(MD)	7	2,777	UTAH	(UT)	2	58
MASSACHUSETTS	(MA)	15	8,718	VIRGINIA	(VA)	8	9,009
MICHIGAN	(MI)	11	7,660	WASHINGTON	(WA)	4	164
MINNESOTA	(MN)	8	3,110	WEST VIRGINIA	(WV)	3	1,020
MISSOURI	(MO)	3	271	WISCONSIN	(WI)	10	17,807
MONTANA	(MT)	1	48				
NEBRASKA	(NE)	2	159	TOTAL		275	197,911

Individual observer totals are posted on the AAVSO website and will be published in *JAAVSO*, Volume 33, Number 2.