## **ASNNE HISTORY**

Astronomical Society of Northern New England
By Pat Day

"HAPPY NEW YEAR ASNNE. What a great year, 2012. Special memories of ...speakers....star parties....trips....festivals....a great date with Venus....work on ASNNE history....shed move....wild things howling at Starfield.....sun spotting.....sharing stars at the beach.....the "origins" discussions.... all the cooperative efforts it took to keep the observatory working and ASNNE outreaching...Thank you all...many new wonders in 2013...JOY!...Sara"

ASNNE celebrated its thirtieth anniversary in 2012. Sara Carter, one enthusiastic member sent out this Happy New Year message to all as we moved into the year 2013. Throughout these many years we have never lost sight of our original purpose and goals:

- To promote astronomy.
- To educate in science and astronomy.
- To assist professional astronomers.
- To be a social organization having fun accomplishing these goals.

Words cannot capture all that ASNNE has contributed to society in those thirty years. Now located in Kennebunk, Maine, the Astronomical Society of Northern New England (ASNNE) is an all-volunteer non-profit educational organization founded in 1982 to promote public awareness of astronomy. Activities include classes on the basics of astronomy, observation with telescopes of all sizes, monthly discussions on a wide variety of astronomy related topics, and outings to special events.

ASNNE encourages schools, scout troops and other community groups to contact us for presentations, observing sessions and slide shows. We design all programs to fit the particular group. These programs cost nothing and the speakers are not paid.

ASNNE history includes acquisition of 3 acres of prime property and the construction of Starfield Observatory by club members. We have hosted approximately 540 star parties for an estimated 22,000 children and adults at our Starfield Observatory in Kennebunk, ME.

Considerable work and time went into creating two information packed club handbooks, which provide a Star Party Curriculum for our outreach to schools and the public. Both were written and compiled by Lisa M.Damian-Marvin, National Board Certified Science Teacher, Georges Valley High School, Thomaston, Me. Financial support for this project came via The Maine Space Grant Consortium.

For the past ten years, ASNNE has organized a "Space Day" presentation for local elementary and middle school students. For seven years, 1997-2003, ASNNE sponsored a student, and held an annual star party for the University of New Hampshire summer science program, Reach for the Stars Science Camp for Girls, ages 10-12.

In spring 2010 ASNNE conducted a Globe at Night project with school and college classrooms as well as scout groups, and discussed light pollution and the best ways to deal with the problem. ASNNE is a member of the NASA Night Sky Network, and has consistently been in the top ten of all the clubs for numerous astronomy events for the public. ASNNE is also involved in projects with other groups such as Citizen Sky and Astronomers Without Borders.

Current ASNNE monthly meetings start with Joan Chamberlin's popular *Beginner Class*. The club invites guest speakers to give special presentations. Many of these speakers are local university professionals and leading researchers on a variety of astronomical areas.

Several current ASNNE members are involved in public projects and outreach:

- Joan Chamberlin, star lady, travels the planet teaching astronomy. She
  recently returned from Nepal and Brazil, where she lectured through the
  NASA Night Sky Network and Astronomers Without Borders.
- Ian T. Durham, PhD, FRAS is Associate Professor & Chair in St Anselm's College, Department of Physics, Manchester, NH.
- Brother Albert Heinrich teaches astronomy classes at the York County Senior College. In November of 2010, he was featured as the key presenter at the Maine Senior College Network Conference.
- Paul Kursewicz has taught beginner Astronomy courses at the University
  of NH in Durham (Continuing Education), Adult Education courses at local
  high schools, and given presentations at the Seacoast Science Center
  (NH), camp grounds, Great Bay National Estuarine Research Reserve
  (NH), and Langdon Place Of Dover, NH (assisted living community). Paul
  is the current editor of Skylights, ASNNE'S monthly newsletter.
- Bernie Reim teaches astronomy as an adjunct professor at The University
  of Southern Maine in Gorham, plus The New School in Kennebunk,
  Maine. He presents shows at the planetarium in the University of Southern
  Maine, Portland. He writes a monthly newspaper column titled What's Up
  for The Portland Press Herald. This popular column discusses several
  Astronomical topics. Reim has been an active member of ASNNE since its
  inception in 1982.
- Peter Talmage teaches courses in Greenfield Community College, Greenfield, MA, in Renewable Energy and Energy Efficiency including: Introduction to Photovoltaics, Photovoltaic Installation, Solar Thermal Systems, Residential Energy and Home Auditing, Extreme Insulation Retrofit, Introduction to Electricity, and a Building Auditing Lab.

...Excerpts from member Anthony Oberley's ASNNE application for Astronomy 2010 Magazine's Outreach Award.

## **Quantum Leap**

ASNNE members crowd into Starfield Observatory—focus time machines—an 8"f/15 Zeiss-Jena refractor and a 16" Meade LX200 GPS Schmidt-Cassegrain—tunnel through time, 1982 to 2012, in a "Remember When" review of the club's thirty year history:

### **1982** Rings are discovered around Neptune.

Dateline July 9, 1982: Foster's Daily Democrat announced, "Like children awaiting the arrival of a circus, locals are preparing to view this year's third lunar eclipse."

John Philbrick, John Gianforte, Ray Sutton, and Gretchen West brought 25 amateur astronomers together to attend the first ASNNE meeting at West Hill Observatory (WHO), located at the Sutton/West home in Eliot, Maine. Star struck attendees viewed the eclipse, discovered other astronomy clubs, shared software, planned monthly meetings, compiled a membership list, set dues at one dollar a month, and chose a title, *The Astronomical Society of Northern New England*.

Gretchen West composed a monthly newsletter, which she mailed to all ASNNE members.

1983 Sally Ride is the first US woman in space; Pioneer 10 is the first Man-made object to leave the solar system.

#### ASNNE held its first election of officers:

<u>Directors</u>: John Philbrick, John Gianforte, and Ray Sutton <u>Secretary</u>: Gretchen West <u>Treasurer</u>: Bernie Reim <u>Members-at-Large</u>: Ray Abbot and Ralph Jackson

Over 200 people, including 50 members, came to stargaze at West Hill Observatory for ASNNE's first Astronomy Day celebration. Eighteen telescopes were on display along with books, slides, and posters. Munchies were served in the barn.

Five helicopters made a slow fly-by over the event. Some attendees wondered, as they saw the approaching blinking lights, if ASNNE's events had interested folks Out There.

Student member, Jeremy Tufts, won the newsletter-naming contest with his submission of "Skylights". Jeremy gave three reasons for his entry: 1) A roof to let in light; 2) The lights in the sky—Sun, Moon, Stars; 3) A newsletter sheds light on subjects of interest to astronomers.

Ten covered wagons plus sixty mules and mustangs conveying 48 teens and 35 adults from a Vision Quest wagon train arrived at the WHO. Gretchen West, *Skylights* editor, wrote, "Picture covered wagons, tipis, and two observatories in the same field. Ray Fielek, Ray Sutton, John Gianforte, John Philbrick, and Bernie Reim were bombarded with questions about the basics of

astronomy...Wagon trainers surrounded the telescopes waiting turns to see the Universe."

1984 Shuttle Discovery and Shuttle Atlantis both make their first flights.

CLUB OFFICERS

<u>Director</u>: Roger Gendron

February *Skylights* announced: "Director – Roger Gendron. Your job, Gendron, is to set up the monthly viewing sessions. Now get out there and blow those clouds away!"

Members set up a display booth at the Newington Mall for Astronomy Day in May. That night the WHO hosted another successful open house.

John Gianforte wrote about his July trip to Stellafane. "If you've ever been to Stellafane in North Springfield, Vermont, then you know that Breezy Hill (where everything happens) is right there in front of you. All you have to do is find it!...Friday night talks were excellent, ranging in subjects from telescopes to astrophotography to the life of Russell Porter, an early amateur astronomer who helped start telescope making in this country...It was a fabulous night! What better place to spend it – a dark hilltop in Vermont with the best amateur telescopes and 1500 fellow astronomers sharing the same objects, the same galaxies, star clusters and nebulae. Now when they talk about the 'Magic of Stellafane' I know what they mean."

This was the second year an ASNNE crew manned a booth at the annual Somersworth, NH Children's Festival. Somersworth High School teacher, Pat Day Aichele, staffed an adjoining booth where children crawled through an imaginary space ship (a prop left over from one of her Portsmouth synchronized swim team water shows.) The ASNNE crew chose not to climb through the space ship. However they did convince her to join *The Astronomical Society of Northern New England*.

1985 The Giotto Probe, the world's first probe designed to study a comet up close, is launched on a mission to study Halley's comet.

<u>CLUB OFFICERS</u> <u>Directors</u>: Dave Olean and Jim Tarbox

Bill Hitchcock and Marc Murais designed a new *Skylights* letterhead and logo. ASNNE accepted an offer to build its collection by reviewing astronomy books for The North American Book Club of Dover, NH. The Book Club offered credit to the club for reviewing 100 books, wholesale prices, and a donation to the treasury.

Halley's Comet booklets and glow in the dark stickers were available for purchase. John Philbrick and John Gianforte found Halley's on September 20.

The December 14 open house at the WHO was a tremendous success. One thousand visitors created quite a parking problem. They all came in a three hour period with an outside temperature of 15°F (not much warmer in the barn) with 20 mph winds.

John Philbrick remembered, "Those of us manning the telescopes nearly froze to death as we had no chance to get warm. However it was all worth it when we heard the ooohs! and wows! from those viewing Halley's Comet for perhaps the only time in their lifetime."

1986 Halley's comet returns; Space Shuttle Challenger explodes; Voyager 2 reaches Uranus, discovering 6 new moons; Soviet Union launches Mir

ASNNE meetings remained the first Friday of every month at 7:30 p.m. The club moved to the Congregational Church in Eliot, Maine.

Halley's Comet was still the hot topic. It sparked member presentations and invitations throughout the seacoast. Members volunteered their time at the Children's Museum in Portsmouth, NH. Once Jim Tarbox and Sue Gagne operated a telescope and binoculars trained on the museum chimney. Ray Sutton and Ray Fielek ran an impromptu session on Mt. "A" (Agamenticus) in Maine. John Philbrick set a record with three talks back-to-back at Portsmouth Dondero School. Ann Guidaitis gave her first talk at Newington Elementary School. Bernie Reim taught Adult Education Astronomy courses. Local churches, Scout troops, malls, festivals and schools kept club volunteers competing with the speed of light as they gave lectures and star parties.

1987 Supernova SN1987A becomes first supernova visible to naked eye since 1604.

<u>CLUB OFFICERS</u>
<u>Directors</u>: Marc Murais, Ray Sutton, Jim Tarbox
<u>Treasurer</u>: Bernie Reim

Bernie Reim worked with York, Maine for permission to hold ASNNE's summer meetings and monthly star parties at the old ski lodge atop Mt. "A".

The astrophotography craze hit club members like the Quandrantid meteor showers. Meetings included a mini-series on film types and development, how to photograph, and pictures/slides taken.

ASNNE opened "Store" hours at break time so members could purchase logo tee shirts and sweatshirts. The navy shirts with white design sold out immediately.

1988 First extrasolar planet is discovered by Canadian astronomers Campbell, Walker, and Yang.

Director: Bernie Reim
Secretary: Suzanne George Treasurer: Sue Gagne
Skylights Editor: Suzanne George
Member-at-Large: Craig Kloppenburg

Clothed in navy shirts with white logo, new and veteran ASNNE members met the astrophotography challenge with fervor. John Gianforte recommended "Motofocus" units; Marc Murais produced a hands-on project to build a portable photographic platform; Roger Gendron spoke on "filters"; members shared astrophotos and slides; Jim Vail presented stunning photographs of his trip to Indonesia to view the total eclipse of the Sun.

Members approved revised ASNNE by-laws and voted to purchase group liability insurance. Nan Blanchette found half million-dollar coverage at a reasonable rate of \$178.00 annually. Quite a purchase in comparison to the bargain \$25.00 coffee pot the club bought that same year.

Roger Gendron described ASNNE as "nomadic." Since its inception in 1982, ASNNE meeting format had been consistent, with location sites as the only variable. In keeping with Gendron's description, the nomads exchanged site locations this year between the WHO, Mt. "A", Marshwood High School, a North Berwick bank, Mariner's Village, and the Eliot Congregational Church.

Summer meetings included *The Martian Chronicles*, a detailed history of the science of astronomy and the role of Mars, presented by Marc Murais and Craig Kloppenburg. Part of this series took place in the back of Marc's truck, as chronicled by Paul Kursewicz in *ASNNE Revisited*, August 1994, "I remember a most unusual club meeting. Our meeting place was atop Mt. A. We were not the only ones on the mountain. The town was having a Halloween dance and bonfire. That left us out in the cold, literally, and it was drizzling outside. We were about to cancel when Marc suggested we hold the meeting in his van. He pulled up next to the bonfire. We hopped into the back of the van with our info, drinks and munchies, and held our meeting. Strange as it seems, it was quite enjoyable."

Several members attended Astrofest at Bradley Field just outside of Hartford, Connecticut. Representatives of all major telescope and accessory manufacturers were there as well as those from major astronomy magazines, and CT and RI astronomy clubs.

**1989** Voyager 2 reaches Neptune, discovering rings and 8 moons; Cosmic Microwave Background Explorer (COBE) is launched

Despite continual site transit, Vin Stahley reminded members, "The Earth will remain under our feet all month."

Moon rocks landed at the North Berwick Kennebunk Savings Bank just in time for an ASNNE meeting. Bob Dyer brought Kennebunk teacher, Dick Willis, with his microscope and 6 small Moon Rocks encased in Lucite disks. Willis described the consistency of each Rock and explained how the samples were obtained.

In August, on Mt. A, 15 students from Japan listened to a translation of John Philbrick's talk on "Naked Eye and Binocular viewing."

Dwane Rines and Cliff Dunning gave an astronomy presentation to a group of Girl Scouts at Odiorne Point. Several members enjoyed their annual Stellafane visit. They observed 142 sunspots. John Philbrick's family opened their summer home in Ludlow, VT to ASNNE Stellafane goers. A September telescope workshop at the WHO provided members a day of camaraderie with 150 curious visitors.

### **1990** Hubble space telescope is launched.

In the early months, dedicated members, Marc Murais, Vin Stahley, and Bernie Reim shared editorship of *Skylights* newsletter.

On the 20<sup>th</sup> anniversary of Earth Day, April 22, 1990, "our mountain", Mt. A, was alive with volunteer clean-up crews, music, environmental exhibits, and a pancake breakfast. Community groups removed tons of trash from trails. Bernie Reim represented ASNNE on an Earth Day Committee set up to decide the fate of the old ski lodge on top of Mt. Agamenticus.

Peter Talmage wrote despairingly about THE NIGHTS OF NO STARS or STAR PARTIES. He begged for Clear Skies. On June 13<sup>th</sup>, the Aurora Borealis gave Talmage his reward. (See July 1990 *Skylights* articles by Dana Hutchins and Bernie Reim.)

ASNNE received an invitation to view the July Solar Eclipse in Siberia for only \$3500.

Jim Goodwin donated a 20" telescope of Cassegrain design to the club. Viewers were astonished by the mirror plus boxes of gears, pulleys, and gizmos on view at a meeting. The instrument was a heavy giant with a method of operation not seen frequently in these times. Club members agreed the mirror should be stripped and recoated – the scope should be made into a "portable" Dobsonion.

# **1991** Compton Gamma Ray Observatory is launched; Keck Observatory is completed.

In February new editor, Peter Talmage, wrote: "Here starts the new *Skylights...*I plan to establish different departments that will appear each month and will allow member and non-member input...I will gladly accept any articles and photographs." Talmage, also a member of the International Dark Sky Association and the New England Light Pollution Advisory, volunteered to be the (Astronomical League Conventions) ALCon representative from ASNNE. (Since 1982 all ASNNE members have been part of the Astronomical League with individual access to its *Reflector* magazine.)

In May John Philbrick and Bernie Reim, assisted UNH physics professor, Jim Ryan, Harvard solar astrophysicist, Sallie Baliunus, and star hustler, Jack Horkheimer {Keep Looking Up}, in a New Hampshire Public Television fundraiser entitled Reach for The Stars. Philbrick and Reim screened100 call-in questions including those directed toward the newly discovered crater in the Gulf of Mexico, which was caused by the comet that killed the dinosaurs.

On May 18, most of the club showed up at Fort Foster in Kittery, Maine to host a star party for a Girl Scout Jamboree.

Paul Kursewicz, John Philbrick and Peter Talmage chased an ever elusive total eclipse of the sun in Hawaii. Kursewicz said his memories of what a corona looks like were dimming. However there were competitions between the three men at an East Sky Observatory star party, as to whose photos and slides came closest to totality. Talmage's shots won with a tiny sliver of Sun.

Dana Hutchins showed ASNNE a video format of CCD images taken by Don Parker of Coral Gables, Florida. The video demonstrated the rotation of Jupiter in astounding detail. Hutchins offered to donate a Lynx CCD camera to ASNNE when a permanent observatory was obtained.

After the shock of seeing a new area light blasting the top of Mt. A, club members started the September meeting with instant light pollution.

ASNNE reached a milestone in the November 1991 *Skylights*, as a tribute to this the 100<sup>th</sup> issue. Talmage dedicated two new sections of the newsletter, LETTERS and OBSERVERS' CORNER. He wrote, "I will print any information anyone has to share with the club on viewing experiences or techniques. Only through sharing in this manner can we expand our own astronomy horizons and enjoy this interest we have in common."

<u>1992</u> Under sponsorship from NASA, Arecibo Observatory begins searching for extraterrestrial intelligence (SETI); COBE discovers ripples from Big Bang;the Catholic Church admits it was wrong in condemning Galileo in 1633.

ASNNE began a new year with tax-exempt status (probationary for 3 years.). Members passed a proposed amendment to the By-Laws making all dues renewable on a yearly basis to be paid no later than the first Friday in January. The membership list would be updated within two months after this date. ASNNE changed its mailing address from West Hill Observatory to East Sky Observatory, P.O. Box 497A, Kennebunkport, Maine. Members moved club equipment from Ray Suttons's barn to Peter Talmage's barn.

Talmage, Gendron, and other club members began the long-range project to rebuild the 20" scope (donated by Jim Goodwin) into a portable Dobsonian. The club voted to appropriate \$250 to fund construction of a 10" planetary reflector. Dana Hutchins, Peter Talmage and Susan Gagne donated \$110 toward the project. Ralph Jackson donated a 1 and 1/4" focuser to replace the original missing unit.

On Astronomy Day, May 9, over 200 people stopped by the ASNNE display at the Newington Mall where 6 telescopes were set up alongside a table with photographs and books. A computer with astronomy software was available for visitors to enjoy.

Roger Gendron, Dana Hutchins, and Bernie Reim taught astronomy classes at the University of Southern Maine in Gorham.

Summer meetings atop Mt. "A" were dark again. Reim now held the key (a red laser pointer) to kill the instant light pollution caused by the spotlight installed in 1991. Talks focused on *Back to Basics* for beginner stargazers. Gendron demonstrated his newly acquired CCD video to help increase interest in astronomy for beginners. Kevin Manley held members spellbound with a presentation on layering and tips for cold weather viewing: "The hat was important."

The Magellan orbiter mapped over 90% of the surface of Venus. The Galileo space probe sent detailed pictures of the asteroid Gaspara back to Earth. The Hubble Space Telescope put itself into a shut down sleep mode in late July

giving everyone a scare. The 49<sup>th</sup> shuttle mission got smoothly underway with the July 31<sup>st</sup> launch of the Atlantis.

(In 1924, Edwin Hubble [1889-1953] announced that there were other Galaxies.)

On September 26, 1992 a Japanese comet hunter, Tsuruhiko Kiuchi, recovered the Swift-Tuttle comet. On Halloween October 31, John Philbrick found the comet.

In December, John Philbrick presented a program on The Tides at Fundy. He used graphics illustrating the tidal variations of the ocean, the gravitational force and the tidal effect. He showed slides demonstrating the ocean level at both high and low tide around the Bay of Fundy, New Brunswick.

Bob Dyer offered his 6<sup>th</sup> grade Kennebunk Sea Road School classroom as an ASNNE meeting place.

**1993** Keck Observatory begins operation.

#### **CLUB OFFICERS**

<u>Directors</u>: Roger Gendron, Kevin Manley, Peter Talmage <u>Secretary</u>: Wayne Larkin <u>Treasurer</u>: Bernie Reim Member-at-Large: John Philbrick

In January, ASNNE held its first meeting at the Sea Road School. Members had access to a VCR, several MAC and IBM computers, a modem linked to NASA, direct views from satellites, extensive files, and Lilliputian size chairs and desks.

Roger Gendron demonstrated that the Earth rotates at about 700 miles per hour. "Can't you feel it? " said Gendron, as he shifted his feet from side to side with outstretched arms.

Roger and Donna Gendron, and Pat Day Aichele began a brief space journey into co-editorship of the newsletter. The Gendrons initiated a new tradition – a multiple page *Skylights*.

In February, Talmage reported progress on the 10" reflector and operational completion of the 8" refractor. On Feb. 19, cold clear skies greeted the star party at East Sky observatory. Six members viewed Mars with the newly installed 8" refractor. Mars put on quite a show revealing a distinct ice cap and many surface markings. M42, the Orion Nebula, was stunning with mottling around the Trapezium. Bernie Reim spoke glowingly about the star party, although he barely survived the winter cold in sneakers.

On May 7, thirty-four members and friends attended an ASNNE field trip to the Morse hall Space Science Center on the University of New Hampshire campus in Durham, NH. James Ryan, Associate Professor of physics, and John Macri, chief scientist in charge of the NASA Gamma Ray Study, each addressed the membership.

"Any time you can apply technology to observations in the Universe, you are going to learn something," said Ryan. "The biggest surprise is that everything is constantly changing."

Macri gave an animated slide presentation on the 12 year design of The Imaging Compton Telescope. It observes gamma rays from 1 to 30 MeV. ASNNE

toured the COMTEL lab to observe NASA computer monitoring done by UNH students.

In June, ASNNE member, Chad Ledgett, collaborated with Pat Day Aichele to publish the first three page newsletter. During his senior year at Berwick Academy, South Berwick, Maine – just before his graduation in which he was valedictorian –Ledgett redesigned the newsletter format. Using up to date IBM and MAC equipment with graphics, he produced star charts, a *Constellation of the Month* portrait, and flowing pages of text.

In September, Chad Ledgett left to begin his freshman year at Stanford University, CA. ASNNE member, Charlie Houser, offered to publish *Skylights* with his new computer equipment. Aichele and Houser continued editorship of the newsletter.

Ledgett sent this response to inquiries about his work on the newsletter,

"During high school I was looking for a group that could help me get more involved with astronomy. I tried to learn from ASNNE, but I didn't have time to give back. I had the opportunity to work with Pat and Charlie, to be able to create something that people will enjoy. We picked up on Peter Talmage's ideas. I added graphics. It was a progressive change."

Chad Ledgett had a vision and our astronomical society benefited immensely from that vision. To quote Charlie Houser:

"Chad brought about a monumental change in *Skylights* publication."

# 1994 Comet Shoemaker-Levy 9 breaks up and its pieces slam into Jupiter.

New members each month shared more technical software and telescopic expertise at meetings and star parties. In April the club purchased and sold 200 pair of sunglasses to view the spectacular '94 eclipse of the Sun. In May ASNNE members celebrated Astronomy Day at Laudholm Farms in Wells, Maine. The June issue of *Skylights* displayed two pages of photos reflecting those who turned out for the event.

Editor, Charlie Houser, brought the newsletter into the digital era. He scanned photographs across pages, added mythological shadowing to emphasize the constellation of the month, designed a bulletin board for all to share, and accepted news submissions by modem. He modernized methods of mailing to get the news out early every month. John Philbrick and Bernie Reim each wrote monthly star columns for local newspapers. Houser incorporated their columns into *Skylights*. Rick Stambaugh was so impressed he said, "Our newsletter is so good I'm thinking about canceling my subscription to *Sky and Telescope*."

ASNNE received a generous amount of equipment from the Frank Lyman estate after John Philbrick and Peter Talmage assisted Mrs. Lyman with inventory of the estate. The club sold \$325 of these assets at Stellafane and retained one large telephoto lens for future use.

Talmage, who had been building telescopes for 30 years, taught members a lesson in design after the '94 Stellafane escapade: "If all is clear and light goes through it, you're all set. We built an absolute bargain for \$75. It showed Jupiter

beautifully."

In November Talmage gave star party viewers an opportunity to see first light through the completed portable Dobsonian. Wayne Larkin had retrieved the newly recoated 20" mirror from Southbridge, Massachusetts. The night was celebratory with perfect 30° weather, no wind and a crystal clear sky.

With the repair of the Hubble Telescope, several NASA successes, and the SL9 crash into Jupiter, the news media highlighted astronomy daily.

From the newsletter, to the CCD, to astronomy programs available to everyone, and even to telescopes like Kevin Manley's new Digital Drive, Automatic Transmission unit, the Digital Era brought new surprises faster than the speed of light.

Annual astronomical events researched by Ian Durham. Many thanks to Durham and a score of other ASNNE members whose names will appear in the final ASNNE thirty year analysis.

...to be continued...

Editor's Note: This thirty year journey through ASNNE's rough and tumble years of looking up, out, over, and under – feet still earthbound – is a work in progress. Members are invited to include memories. Please send dated anecdotes with full names to patday3@yahoo.com>.

Sincerely, Patricia Day Aichele, ASNNE historian November 2013