Thank you!

To all of our ASTRO family of educators and astronomers for enriching our first 8 years and offering students the opportunity to reach for the stars!

Happy Holidays from the Project & Family Astro Staff

Project ASTRO - Tucson Coalition Organizations

- Flandrau Science Center
- Kitt Peak National Observatory
- Lunar & Planetary Laboratory
- Mt. Graham Discovery Park
- NOAO
- Pima College
- Pompea & Associates
- Steward Observatory
- Whipple Observatory
- Tucson Amateur Astronomy Association
- Tucson Unified School District
- US Gemini Program

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Project ASTRO - Celebrates 8 years!

Project ASTRO continues strong into its eighth year in Tucson. The training workshop for Project ASTRO-Tucson occurred on 3-4 October 2003 at the University of Arizona with 33 teachers and 27 astronomers in this year’s program. Highlights of the workshop included a talk on the craters of the Moon by noted planetary scientist, Dr. Charles Wood, a talk on student misconceptions in astronomy by science education specialist, Dr. Ed Prather, and the participation of the group in 10 hands-on, minds-on activities. One set of activities, led by Mike Zawaski of the Space Science Institute in Boulder, was on “Kinesthetic Astronomy.” Another was based on integrating art, poetry and scientific journaling from the book “Moon Journals” and was presented by the former director of Project ASTRO, Suzanne Jacoby, her teacher partner, Susie Townsend, and NOAO staff member, Kathie Coil. A trip to Kitt Peak National Observatory provided the inspiration for this last interdisciplinary activity.

The next follow-up workshop will be held in February 28, 2004, at the home and observatory of David and Wendee Levy.

To date 330 teachers and astronomers have been trained in the best methods to bring hands-on, astronomy-oriented activities into science classrooms. More than 100 of these teacher/astronomer partnerships from past years remain active today. Through them, Project ASTRO-Tucson has reached more than 18,000 students and counting. The project’s adaptability, applicability, and approach to a wide variety of audiences has enabled its growth and expansion to other projects (Family ASTRO, ASTRO-Chile).
Family ASTRO Enthusiastically Plows Into Second Year

Family ASTRO has successfully initiated its second round of annual training workshops from October through November 2003. Held at the Desert View High School library again this year, the staff of Education and Public Outreach at NOAO recently hosted three workshops on the Night Sky Adventure, Moon Mission, and Race to the Planets. One more workshop, Cosmic Decoder, will premiere on January 22, 2004.

Family ASTRO is an NSF-funded program originated by the Astronomical Society of the Pacific to help parents and caregivers get more involved in their children’s science education, help families spend more time together in active experiments, observations and discussion, and help families enjoy astronomy together.

The first workshop, Night Sky Adventure, trains event leaders to help families get to know bright stars and constellations by building star finders, putting family heroes in the sky and doing a celestial treasure hunt. The second workshop, Moon Mission, train event leaders to encourage families to work as a team in a race against the clock to recover damaged instruments before the Sun sets. The third workshop, Race to the Planets, trains event leaders to encourage families to explore intriguing worlds in our solar system by playing a planets game, building planetary flags & figuring out weights on Jupiter or Pluto. The fourth workshop, Cosmic Decoder, will shed new light on the world of color and filters.

Once trained at these workshops, event leaders hold evening or weekend family events where families try activity stations & facilitated activities & receive a kit to take home.

Some of the event leaders attending this year’s training workshops returned from last year to learn about new kits. Others experiencing Family ASTRO for the first time include two new Kitt Peak docents, Project ASTRO astronomers, Girl Scout leaders, and teachers from Arizona Virtual Academy, TUSD, SUSD, and Amphip USD. The dedication and enthusiasm of the leaders were evident in all three sessions. The 2003-2004 events are off to an auspicious beginning.

For more information visit http://www.astrosociety.org/education/family_astro.html or contact Connie Walker at 520-318-8535 or cwalker@noao.edu and Robert Wilson at 520-318-8440 or rwilson@noao.edu. Applications are still available on-line at http://www.noao.edu/education/family_astro/fa_application.pdf

Suzanne Jacoby Award

Former Project ASTRO director, Suzanne Jacoby (right) presents the 2003 Jacoby Award to Project ASTRO teacher, Alta Gracia Carrillo (center), and her two astronomer partners, Robert Crawford (left) and Ed Finney (right), for their unique accomplishments at Wakefield Middle School via Project ASTRO. Alta was the reading and art teacher who decided to use her eighth grade class to help students work on science projects. Her Project ASTRO partners met for two hours a class over 9 visits in January and February 2003 to prepare the children for the science fair using Project ASTRO activities as a basis for many science projects (e.g., crating). Their efforts met with resounding success.

Congratulations Team Wakefield!

In addition to updating our records, the Project ASTRO staff is interested in finding out information about how you work with the ASTRO activities in your classroom and your preferences for future workshop themes. Please complete the following survey and return by January 30, 2004. Fax to Connie Walker at 520 318-8451 or send to Connie Walker, NOAO, 950 N. Cherry Ave., Tucson, AZ 85719.

P R O J E C T  A S T R O  A C T I V I T Y  S U R V E Y

NAME: ____________________________

HOME ADDRESS (Please Print) ____________________________

WORK ADDRESS (Please Print) ____________________________

Home Phone: ____________________________ Work Phone: ____________________________

Work Fax: ____________________________ E-mail Address: ____________________________

Are you a Teacher ☐ or Astronomer ☐

Are you currently working with a partner? YES ☐ NO ☐ Name: ____________________________

If no, would you like to? YES ☐ NO ☐

Do you wish to receive mailings and e-mail from the Project ASTRO program? YES ☐ NO ☐

1. How many years have you used Project ASTRO activities in the classroom, including the current year? ______

2. How many hours/class do you spend on average each year on Project ASTRO? ______

3. How many classes/year do you have on average each year that do Project ASTRO activities? ______

4. How many students/class on average do you have each year? ______

5. Approximately how many students have you reached with Project ASTRO activities in the last year? ______

6. Which Project ASTRO activities have you done?

7. When, where, at what time and on what activities will your Project ASTRO events be scheduled this year?

8. Which of the following themes would you be interested in as an optional 4-hour workshops?

☐ Planets in our Solar System ☐ The Moon

☐ The Sun ☐ Stars (Birth, Life, Death)

☐ Galaxies ☐ Other Planets/Astrobiology

☐ Constellation ☐ History of Astronomy

☐ The Earth (Diurnal and Annual Motion, Reasons for Seasons, etc.)

☐ Other: ____________________________

9. How else could we provide you with a better Project ASTRO experience in the classroom?
ASTRO-Chile Update

The ASTRO-Chile effort continues to expand its bilingual outreach program in astronomy education with great enthusiasm in La Serena at NOAO South and in Tucson at NOAO North. The fourth workshop took place on May 12, 2003. The workshop topic was light pollution education. The Chilcan teachers reported on a study of light pollution carried out regionally by their students. On the Tucson side, NOAO scientists, Spanish-speaking science teachers from middle, and high schools in Tucson, and NOAO outreach personnel were in attendance.

Further light pollution studies done at both locales is the main theme for this coming year. At the fifth workshop on November 25, 2003, the Tucson teachers reported on a light pollution study performed by students all over Tucson and similar in scope to the Chilcan study. Long-term plans are to link the two groups with international light pollution education efforts in Austria and Greece. A talk and a poster describing the collaborative and individual efforts of NOAO North and South on light pollution were presented by Connie Walker at the International Astronomical Union meeting in Sydney, Australia, on July 22, 2003.

A Night with David Levy

On September 13, 2003 a group of fifty visitors, including Project and Family ASTRO participants, had the good fortune to attend an evening with David and Wendee Levy on Kitt Peak. The event began with afternoon solar observing on the patio, featuring Maxscopes from Coronado Instruments. Afterward, people gathered in the Visitor Center to enjoy a presentation by Levy on the comet Shoemaker-Levy 9. A question and answer session followed and then it was dinnertime.

Hot dogs and hamburgers grilled outdoors and served with salad and baked beans had everyone pleasantly full but not too full to watch the sunset from the bluff near the SARA 36-inch telescope. From there it was back down to the visitor center observatories for an evening of observing celestial wonders with David and Wendy. Suffice to say, people had a very memorable evening on Kitt Peak.

Mark Your Calendars


February 28, 2004 - Follow-up workshop at David Levy’s home.

Saturday, April 24, 2004 - Astronomy Day with David Levy and observing the Lyrid Meteor Shower on Kitt Peak (reservations required).

Friday & Saturday, September 17-18, 2004 - tentative dates for the annual Project ASTRO training workshop for astronomers and new teachers.

Wednesday, October 27, 2004 - a total lunar eclipse. Join Project ASTRO staff and David Levy on Kitt Peak for a spectacular evening event (reservations required).

Resources for UAYF Activities

Let us help you with selected Universe at Your Fingertips (UAYF) resource materials - we have the following and are happy to share –

- Lunar Phases with Pictures (Activity A-1)
- Lunar Phases with Moon Balls (Activity A-3)
- Observing Where the Sun Sets (Activity B-3)
- Daily Motion of the Sun (Activity B-6)
- Venus Topography Boxes (Activity C-7)
- Planet Picking (Activity C-9)
- Earth as a Peppercorn - Solar System Model (Activity D-7)
- Making Craters (Activity E-1)
- Comet Making Supplies (Activity E-3)
- Light & Color - Activities from the Foster Project (Activity J-14)
- Spectroscopes & Spectrometers (similar to Activity J-27)

For more information or to make reservations, please contact Connie Walker at 518-8535 or cwalker@noao.edu or Kathie Coil at 518-8250.
THE 2003/2004 TEACHER/ASTRONOMER PARTNERS

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<thead>
<tr>
<th>FIRST NAME</th>
<th>LAST NAME</th>
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<td>Agnes</td>
<td>Aquayo</td>
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<td>Latin</td>
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<td>Teresa</td>
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<td>Suzanne</td>
<td>Smith</td>
<td>AZ School for Deaf and Blind</td>
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<td>Suen</td>
<td>Rock Point Community School</td>
<td>Deidre Hunter</td>
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THE 2003/2004 FAMILY ASTRO EVENT LEADERS

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<thead>
<tr>
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<tr>
<td>Pat Branum</td>
<td>Kitt Peak Docent</td>
<td>Karen Oliver</td>
<td>Arizona Virtual Acad.</td>
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<td>Carol Gaxiola</td>
<td>Naylor M.S. (TUSD)</td>
<td>Marta Spears</td>
<td>Amphihteter M.S.</td>
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<td>Michelle Higgins</td>
<td>Sahuaro Girl Scouts</td>
<td>Elizabeth Springs</td>
<td>Drexel Elem. (SUSD)</td>
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<td>Carolyn and Susan Hollis</td>
<td>John E. White Elem. (TUSD)</td>
<td>Sandra Suarez-Hairgrove</td>
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<td>Patricia Johnson</td>
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<td>Debra Summers</td>
<td>Ocotillo Elem. (SUSD)</td>
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<td>Gene Koch (Astronomer)</td>
<td>Kitt Peak Docent</td>
<td>Emmet Sweat</td>
<td>Sahuaro Girl Scouts</td>
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<td>Lolly Levine</td>
<td>Pueblo H.S. (TUSD)</td>
<td>Rebecca Swwegle</td>
<td>Arizona Virtual Acad.</td>
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<td>Amanda Malto</td>
<td>Mission Manor Elem. (SUSD)</td>
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Spring Workshop - Jarnac Observatory

The workshop agenda will include the sheer fun of observing sunsets, sunrises, the Moon and other wonders of the nighttime sky with several of David’s 14 telescopes. Workshop participants will meet at NOAO (950 N. Cherry Ave.) at 2:45 pm. Vans will depart no later than 3 pm to arrive at the Levy’s home by 3:30 pm. Vans will leave their home around 9 pm at the latest.) Bring very warm clothing, a flashlight, and your enthusiasm for astronomy!

To make your reservation, send in the form to the address shown below or fax the form to Connie Walker at 520-318-8451. We encourage you to come with your ASTRO partner.

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Project ASTRO Tucson

SPRING WORKSHOP RESERVATION FORM

Saturday, February 28, 2004

Name: _______________________

Address: ____________________

Contact Phone Number: ________

Grade Level: ________

School Name: _______________

ASTRO Partner: _______________

E-mail Address: _______________

E-mail Address: _______________

Registration Deadline is January 30, 2004...Space is limited...