



Project ASTRO - Tucson

The Local ASTROGRAM for Tucson Project ASTRO Participants

Issue 12

November 2000

Project ASTRO - Tucson Coalition Organizations

The University of Arizona:
Flandrau Science Center
Mt. Graham - Discovery Park
Lunar and Planetary Lab
Steward Observatory

Tucson Unified School District

Tucson Amateur Astronomy
Association (TAAA)

Fred Lawrence
Whipple Observatory

Sahuaro Girl Scout Council

Pompea & Associates

Pima Community College

5th Project ASTRO Workshop Featured Trip to Kitt Peak and 'Moon Journals'

Workshop a Success According to Educators and Scientists

Led by the National Optical Astronomy Observatory (NOAO), the Project ASTRO – Tucson site hosted its fifth annual workshop October 13-14 at the Kitt Peak Visitor Center and the NOAO headquarters in Tucson.

Twenty-two teachers were paired with seventeen astronomers to form partnerships and teams. Most participants were from the Tucson area, but some traveled from the Tohono O'odham Nation, Casa Grande, Safford, Phoenix and Russellville Arkansas. Workshop presenters included authors Joni Chancer and Gina Rester-Zodrow (*Moon Journals, Writing, Art and Inquiry Through Focused Nature Study*), LPL Scientist Professor Robert Strom, Tohono O'odham Storyteller Daniel Lopez, and local educators Larry Dunlap, Michael Crawley and Renee Crawley.

(See 'Workshop' on Page 2)

Mark Your Calendars for March 24, 2001 Follow-Up Event

Make 'Topo Boxes' For Your Class

All ASTRO Participants Invited to Follow-up Event

Don't miss this year's Project ASTRO follow-up event! Teachers and astronomers from all five years of Project ASTRO are invited for a morning of activities, and catching up with old friends. We'll make class sets of "Venus Topography Boxes" (see *UAYF Activity C- 7*), and hand out the latest astronomy giveaways.



This event will be held on the patio at the National Optical Astronomy Observatory building, 950 N. Cherry Ave.

**Reserve your space (and supplies)
at this follow-up workshop.**

Call: 318-8230

Email: outreach@noao.edu

(Workshop - Cont'd from Page 1)

The Friday evening session at the Kitt Peak Visitor Center 16" telescope was hosted by Adam Block and Richard Barchfield, observers with the Nightly Observing Program (NOP). Unlike the usual astronomer visitors who prefer very dark skies, Project ASTRO participants were delighted by the rising full moon, and awed by their observations using telescopes, binoculars and naked eye. The Visitor Center NOP staff and Project ASTRO astronomers served as knowledgeable resources allowing a rich exchange of astronomy facts.

This year's workshop was funded by a NASA IDEAS grant titled "Did You See the Moon Last Night? – Scientific Inquiry through Writing, Art, and Observation". The goals of this workshop were to extend concepts from the book *Moon Journals: Writing, Art and Inquiry through Focused Nature Study* into the area of authentic scientific inquiry, and have teachers work in collaboration with trained astronomers to assist with student investigations of the moon.

National Network Will Present at Winter AAS/AAPT Conference

In December 2000, Project ASTRO in Tucson will complete its term as first Chair to the Project ASTRO National Network of eleven sites around the country. As members of the National Network Publicity Committee, Tucson staff will produce brochures and posters to promote the group at the American Astronomical Society/American Association of Physics Teachers (AAS/AAPT) meeting in San Diego, January 7 – 11, 2001.

Tucson will be one of several Project ASTRO sites to present a poster paper at the meeting, and the Project ASTRO National Office will present a paper in the Education session. For information about the conference visit the web site: <http://www.aas.org/meetings/aas197/prelim/prelim.html>

“More Universe At Your Fingertips” **Available from the ASP - Use your ASTRO Discount**

The 'sequel' to the *Universe at Your Fingertips* resource notebook can be ordered from the Astronomical Society of the Pacific (ASP), with **the usual Project ASTRO partners' 10% discount.**

More Universe at Your Fingertips, compiled by Pacific Science Center Director Dennis Schatz, features many new astronomy and science experiments. To order your copy, call the ASP catalog department, 1-800-335-2624.

To get a 10 % discount on all orders from the ASP catalog, tell them you're a Project ASTRO partner.

Don't Miss the ASTRO Listserv

Useful Tool Allows Quick Email Interaction

The Project ASTRO staff attempts to maintain a current list of email addresses for the "astrotuc" listserv. The listserv is available for staff and participants to post useful information by email. By now you should have received an email welcoming the 2000-01 participants. If you have not, here is how to subscribe, and unsubscribe, to the listserv.

To subscribe, in the TO line of your email message write:

astrotuc-request@noao.edu

The e-mail subject line can be left blank and the body of the message must contain the single line:

subscribe astrotuc your email address

For example: subscribe astrotuc gbeal@noao.edu

If you ever want to remove yourself from this mailing list, you can send mail to <dommajor@noao.edu> with the following command in the body of your email message:

unsubscribe astrotuc your email address

For example: unsubscribe astrotuc gbeal@noao.edu

If you have questions regarding the astrotuc listserv, please contact Ginny Beal, gbeal@noao.edu, or call 318-8535. We'll see you on the listserv!

ASTRO Workshop Evaluation Results - October 13-14, 2000

We use feedback from teachers and astronomers to improve the workshop. This year, as always, the training workshop received mostly favorable comments. Following you will find the average rating assigned to each applicable category on the feedback form. The first number is the astronomer average; the second number is the teacher average. Higher numbers indicate a more favorable rating, from poor (1) to excellent (5).

Friday Afternoon

4.2	4.9	Intro to <i>Moon Journals</i>
3.9	4.3	Lunar Scientific Presentation

Friday Evening

4.2	4.7	Intro to Kitt Peak
4.1	3.8	Tohono O'odham Storytelling
4.0	4.8	Sunset/Moonrise Activities
4.5	5.0	Night Sky Observing - Visitor Center 16"
4.3	4.7	Night Sky Observing - Binocs./Naked Eye

Saturday Morning

4.1	4.6	Recap of Evening at Kitt Peak
4.1	4.2	Moon Phases - Picture Arrangement
4.0	3.8	Moon Phases - Moon Balls

Saturday Afternoon

4.4	4.9	Art & Writing Invitations
4.4	4.5	Earth As a Peppercorn

General

4.6	4.9	<i>Universe At Your Fingertips</i>
4.2	4.9	Project ASTRO How-To Manual
4.5	4.9	Other Materials
4.3	4.4	Workshop Site and Location
4.4	4.6	Planning Time
4.4	4.2	Food
4.4	4.8	Workshop As A Whole

What we know from your comments - below are a few of your comments with our response

1. *Better workshop space is needed.*

If anyone knows of a large, free or inexpensive space with comfortable chairs, good acoustics, and that can be made dark, please let us know!

2. *The writing and art is for teachers not scientists.*

We hoped to emphasize to everyone the usefulness of these activities for integrating multi-disciplines.

3. *The workshop was too "moon-focused".*

Previous classroom activities have indicated there's value in focusing on one topic, and Project ASTRO is currently funded for this approach. From the topic of the moon, other astronomy topics easily follow.

4. *More hands-on activities are needed.*

We hope to extend the length of the workshop to include current activities and more.

5. *Look through a big telescope.*

The large telescopes on Kitt Peak are used for research, with instruments and computer terminals. The data obtained is stored and processed at a later time. The 16" telescope at the Visitor Center is the biggest telescope on Kitt Peak available to our group for viewing with an eyepiece, giving participants a true observing experience.

Thank you for your comments!!! Now it's back to the drawing board - to find ways of presenting the quality workshop we've developed, and make it even better.

Your suggestions are always welcome. Please send additional comments to Ginny Beal, 318-8535, gbeal@noao.edu

Welcome New Project ASTRO Participants!!

Below is a list of Project ASTRO Participants for the school year 2000-01. Welcome them to the growing Project ASTRO family, and share your experiences with them - the easiest way is with the astrotuc listserv - send an email to astrotuc@noao.edu.

Teacher Partner (Tucson schools unless other location is listed) Astronomer Partner

Jaquetta Alexander - Erickson Elementary School
Valeria Beuke - Santa Rosa Boarding School, Sells, AZ
David Branch - Lafe Nelson Elementary School, Safford, AZ
Caryl Crowell - Borton Primary Magnet School
Lynne Cummings - Montecito Union Elementary, Santa Barbara, CA
Anne Davies - Hendricks Elementary School
Thomas Kaigler - Maxwell Middle School
Mary Kraus - Tucson Academy of Leadership
Madona Kvale - Lafe Nelson Elementary School, Safford, AZ
Deborah Larned - Coyote Trail Elementary School
Susie Lewis - Richardson Elementary School
Constance Lopez - Santa Rosa Boarding School, Sells, AZ
Barbara McCarthy - Solomon Elementary School, Solomon, AZ
Teresa Ortiz - Valencia Middle School
Judy Ramirez - Richardson Elementary School
Ed Roberts - Pottsville High School, Pottsville, AR
Susan Sacco - Elgin Elementary School, Elgin, AZ
Tom Sanchez - Lafe Nelson Elementary School, Safford, AZ
Denise Smith - Miles Exploratory Learning Center
Karla Teran - Wakefield Middle School
Paige Valderrama - Wade Carpenter Middle School, Nogales, AZ
Pam Whiffen - Palo Verde Middle School, Phoenix, AZ

Sharon Koerber - Sky Works
Gary Gardner - Parallel Design Inc.
John Ratje - UA - Steward Observatory
Bill Ball - NOAO

Robert Wilson - Eloy Detention Center
Steve Ratts - Raytheon Company
Johathan Fortney - UA - Lunar & Planetary
John Ratje - UA - Steward Observatory
Larry Behrs - Nova West Communications
Larry Behrs - Nova West Communications
Tom Rolfsmeyer - Sonora SW Molding
John Ratje - UA - Steward Observatory
George Barber - Raytheon Company
Larry Behrs - Nova West Communication
Jeff Robertson - Arkansas Tech University
Mark Trueblood - NOAO
John Ratje - UA - Steward Observatory
Chuck Dugan - Sunquest Information
John & Deb Soule - TMC - Retired
Tom Saville - Professor - Retired
Jennifer Neakrase - ASU - Astronomy Dep



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