Project ASTRO UTAH *ASTROGRAM*

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THE CLARK FOUNDATION

CONTENTS

Project ASTRO UTAH Is Sponsored By
The Clark Foundation
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And By
Hansen Planetarium
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ASTRO UTAH is an expansion site for the national Project ASTRO program, created by the ***Astronomical Society of the Pacific***

COALITION MEMBERS

The Space Dynamics Laboratory at Utah State University
Weber State University Department of Physics
University of Utah Department of Physics
Hansen Planetarium Education Department
Utah Valley State College Department of Physical Sciences
Brigham Young University Department of Physics and Astronomy
Ogden Astronomical Society
Salt Lake Astronomical Society
Utah State Office of Education

WELCOME!

Shoutin' *(adverb, a young person's expression of approval and happiness)*

Pop quiz: Do you know what "cool" means? If your first thought is, "a relatively low temperature," then you need to get out more often. For most Boomers, "cool" means desirable, meritorious, praiseworthy. It also means those of us for whom "cool" is synonymous with "good" are hopelessly dated. I have bad news for Gen-X'ers, "excellent!" is similarly passé.

We need to get up to speed, lingo-wise.

The following is a verbatim account of an exchange between a Project ASTRO UTAH astronomer and a student as they pass in a school hallway:

> Student: "Hey, astronomy guy! Are you coming to our school again this year?"
>
> Astronomer: "Yep."
>
> Student: *"Shoutin!"*

Project ASTRO UTAH has arrived.

Our first year was… well… *shoutin'*. The teacher-astronomer collaborations I observed and the students' reactions to "their" astronomers convinced me that the project is unquestionably A Very Good Thing.

Even better, of the twenty-three astronomer-teacher teams who began the project last January, nineteen will be working together again in the coming school year.

The immutable laws of both Murphy and Probability dictate that there is exactly a 0% chance of a 100% second-year return rate from a group of 46 people. This makes the fact that five out of six partnerships are continuing into another school year extremely gratifying.

A few of the astronomers from the 1997/98 school year will be continuing with new teacher-partners, and we will be adding several new astronomer-teacher teams this year. In total, we look forward supporting about 30 Project ASTRO UTAH partnerships in the 1998/99 school year.

Project ASTRO UTAH partnerships reached over 1,200 students in ten Utah school districts last year, with an average of more than four hours of astronomer-teacher activities presented to each classroom of students. For people who care about such things, the time donated to the project by teachers and astronomers was valued at approximately $30,000. Now, I'm not one to take $30,000 lightly (if any of you do, please give me a call), but it seems to me that in terms of the impact Project ASTRO has on the students and teachers involved, this is a lot of bang for the buck.

To all the people whose enthusiasm, smarts, time and talent have given Project ASTRO UTAH such a great start, **THANK YOU!** You folks are the best.

Seth Jarvis, Project ASTRO UTAH Coordinator

SHINING STARS

"The Bomb!"

Stay calm, we don't mean an explosive. Again, we're using contemporary kidspeak. If we're here to support their appreciation for astronomy, then we must understand their native tongue.

For those of you who may not know it, to praise something as being "the bomb" is to bestow the ultimate accolade. Not surprisingly, people can be (and often are) "The Bomb."

There are so many "bombs" associated with Project ASTRO UTAH that it is difficult to pick only one for recognition. In fact it's so difficult that we won't. Instead, in this issue we will recognize five particularly bomb-like individuals.

BOMBS AWAY!

Bombs 1 and 2: The Project ASTRO partnership of Bob Tillotson of the Ogden Astronomical Society and Cheryl Wilson of Vae View Elementary School in Layton. Bob and Cheryl worked together to give the students in Cheryl's class a terrific series of astronomy lessons. Most memorable was the outdoor scale solar system model this partnership created with the students, even though the activity was conducted in the middle of a particularly nasty hail storm.

(continued on page 3)

Bomb 3: *As part of their preparation for having an astronomer visit their classrooms, teachers often ask their students to draw a picture of what they think an astronomer might look like. Vae View Elementary School student Abe Patino submitted this sketch. Abe, you're The Bomb.*

Drawing by Abe Patino, Vae View Elementary School

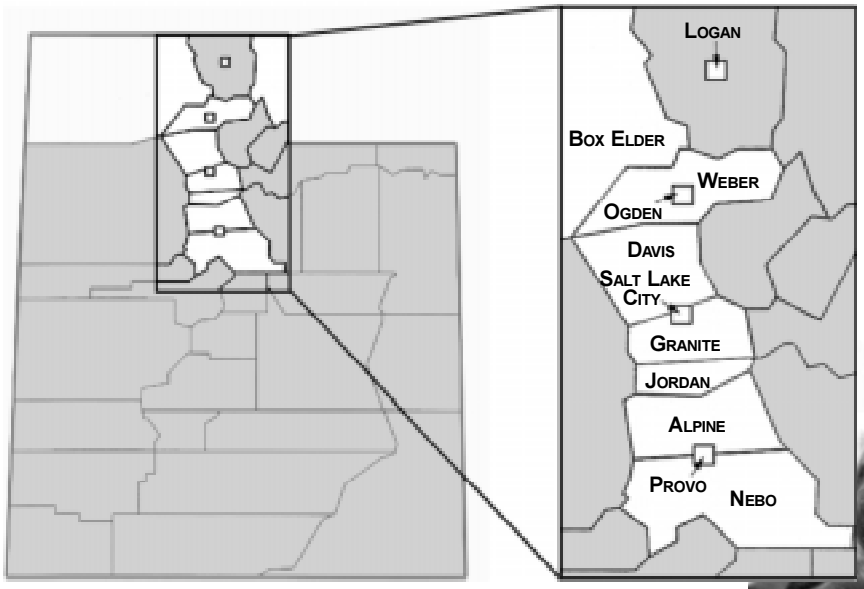
PROJECT ASTRO UTAH 1997-98

Project ASTRO UTAH creates long term one-to-one partnerships between professional and amateur astronomers and sixth grade teachers (the grade in which astronomy is the predominant subject of the core science curriculum). The project creates and supports collaboration among Utah universities, aerospace businesses, astronomy clubs, planetariums and elementary schools. The Clark Foundation organizes and directs a coalition of professional and amateur astronomers, educators and educational institutions that began participating in Project ASTRO UTAH in the 1997-98 school year.

Project ASTRO UTAH is now one of 10 sites for the national Project ASTRO program created by the Astronomical Society of the Pacific in 1993 and funded by grants from the National Science Foundation and the National Aeronautics and Space Administration.

Cosmic Concoctions: Students at Midvalley Elementary brew a batch of comets.

Map of Utah School Districts participating in Project ASTRO UTAH



In 1997-98, 23 teams of astronomers and teachers from 11 Wasatch Front school districts participated in Project ASTRO UTAH.

In the 1997-98 school year, 23 teams of astronomers and teachers from 11 Wasatch Front school districts participated in Project ASTRO UTAH. These teachers and astronomers received two days of intensive training with their partners and each team received a variety of teaching resources, including an extensive collection of classroom activity guides, videotapes, slides and posters.

Following the training workshop, each astronomer made a minimum of four visits to "their" teacher and students. Each visit was planned and scheduled by the astronomer-teacher team to maximize the visit's relevance to the class's science curriculum. During these visits the teacher and astronomer jointly presented an astronomy activity using the materials provided during their training workshop. In many cases, astronomers and teachers arranged field trips to a planetarium or an evening "star party" using telescopes brought to the school.

Hansen Planetarium astronomy educator Jayceen Craven-Nicholson helps a student at Altara Elementary School to understand the phases of the Moon.

Through multiple visits with *their* astronomer, students and teachers got to know this dedicated professional as a complete person, rather than the one-dimensional stereotype so often depicted in movies and TV. They learned that people who pursue astronomy and other sciences, either as a career or a serious hobby, are not much different than themselves.

Future enhancements of Project ASTRO UTAH include plans to expand the program into school districts beyond the Wasatch Front to cover teacher-astronomer partnerships in southern Utah. We will be working with faculty from the colleges and universities of southern Utah as well as amateur astronomers in the region. We also intend to continue building the web site (at *http://www.clarkfoundation.org/astro-utah*), so stay tuned for more to come.

A man with The Right Stuff: Cliff Peterson of the Ogden Astronomical Society prepares his computer-controlled telescope for a Star Party.

Shining Stars

"The Bomb!" *(continued from page 1)*

Bob began with a soccer ball-sized Sun, and proceeded with the students to pace off the distance to the planets. Mercury, Venus, Earth, Mars, and even Jupiter (about the size of a walnut) presented no problem as the students trekked across the school's playing field. The hail came down with increasing energy, but Bob, Cheryl, and her students pressed on.

That's dedication: Bob Tillotson of the Ogden Astronomical Society and students from Vae View Elementary construct a scale model Solar System during a hail storm.

The distance from Jupiter to Saturn came as quite a surprise to the students. When they finally reached grape-sized Uranus, more than half a kilometer from the soccer ball Sun, they also realized that 1) they were so far away that the "Sun" was no longer visible, 2) they had only traveled half the distance from the Sun to Pluto, and 3) the outer solar system really is a cold, miserable place. Appropriate references to the increasingly nasty shower of "comets" were made, and common sense finally triumphed over science. Bob, Cheryl and her students (resembling a collection of drowned rats) trooped back to the class. After returning to the warmth and comfort of the classroom, Bob then incorporated the students' hard-earned knowledge of the scale sizes and distances of the solar system into a discussion of the emptiness of space and what remarkable places planets are.

Bombs 4 and 5: Astronomers Mike Salamon and Dave Keida from the University of Utah, and Rosemary Hendricks who teaches at Midvalley Elementary School in Midvale. These three organized and conducted a comet-making party in Ms. Hendricks' classroom, involving the fabrication of not one, but about a dozen comets. Drs. Salamon and Keida captivated the students with their description of the nature, origins, and "life" of a comet, and then with Ms. Hendricks supervised an orgy of comet-making involving every student in the school's sixth grade. Many pounds of dry ice were used, and we learned that the ammonia used in the construction of a comet should not be cleaning ammonia with a detergent additive. If you want to know why, consider the results of adding dry ice, dark Karo syrup, dirt, water, and sudsing ammonia in a bowl surrounded by sixth-graders. Multiply this by at least a dozen comets in production, and you'll understand. (It might be appropriate to mention that the custodian at Midvalley Elementary is himself worthy of a "bomb" award.)

Dynamic Duo: University of Utah astronomers Dave Keida (left) and Mike Salamon (right) use liquid nitrogen in a demonstration for students at Midvalley Elementary.

Dr. Keida is additionally bomb-worthy for his work at Libbie Edwards Elementary School in Salt Lake City, where he helped deliver the mother-of-all-star-parties. More than 300 students, parents and siblings turned out for a school-wide star party involving eight telescopes, two indoor astronomy lectures, and the school's hallways and classrooms decorated in "Invent an Alien" and "Model Solar System" motifs.

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PROJECT ASTRO UTAH TRAINING WORKSHOPS FOR ASTRONOMER/TEACHER PARTNERSHIPS

FREE workshop for new and returning partnerships

Teachers and astronomers who are new to Project ASTRO UTAH will need to attend a one-and-a-half day training workshop.

In an effort to make it easier to get to a workshop (i.e., spend less time on I-15) and to fit into your schedule better, we're going to try something new this year – a northern location at Weber State University, and a southern location in West Jordan at Jordan Hills Elementary School.

Teachers and astronomers who plan to participate in Project ASTRO UTAH partnerships for the 1998/99 school year who did **not** attend the workshop last January in Salt Lake City need to enroll for one of these workshops. Of course, teachers and astronomers who **did** attend the January 1998 workshop are welcome (and encouraged) to attend one of the new workshops as well.

There is no cost to attend the workshop. A mileage allowance of $0.25 per mile is available. We'll have snacks, sodas, etc., available on Friday, and we'll also feed you lunch on Saturday.

So what happens at the workshop?

Topics to be covered in this workshop will include:

- Getting to Know Your Partner
- Unraveling Student Preconceptions in Astronomy
- Quality Astronomy Activities that Work (lots of these)
- Roles and Concerns of Teachers and Astronomers
- Planning Astronomy Activities with Your Partner
- Evaluating the Impact of Project ASTRO

FYVVS! (FREE Yet Very Valuable Stuff!)

All workshop participants will receive a Wonders of the Universe Calendar, posters, and other astronomy related goodies. Each **new** ASTRO partnership will receive a variety of slides sets, videotapes, and most importantly, ***The Universe At Your Fingertips*****,** an amazing collection of classroom-proven astronomy activities compiled by Project ASTRO's national sponsor, the Astronomical Society of the Pacific.

Starry Night

Additionally, we'll be demonstrating the *Starry Night* desktop computer planetarium program which we consider to be the best software of its kind currently available. **FREE copies of this software** will be available at the workshop. The retail value of this software is $100.

Where & When?

The times and locations of the workshops are:

Jordan Hills Elementary School - January 15 and 16
Friday afternoon 2:30 to 6:00 P.M.
Saturday 8:30 A.M. to 5:00 P.M.
Location: Jordan Hills Elementary School, 8892 South 4800 West, West Jordan, Utah.

Weber State University - January 22 and 23
Friday afternoon 2:30 to 6:00 P.M.
Saturday 8:30 A.M. to 5:00 P.M.
The **NASA Teacher Resource Center** will be open for us on Saturday, January 23. For more information take a look at: *http://physics.weber.edu/planet/nasatrc.html*.
The **Ott Planetarium** will also present a planetarium show to any teachers and astronomers interested in seeing the current elementary school show.
Location: Lind Lecture Hall on the WSU campus, Ogden, Utah. (Turn off of Harrison Blvd. at 3750 South and go east to the information booth to receive a parking pass and map. There is also a map at: *http://physics.weber.edu/planet/WSU-Planetarium-map.gif)*

Pre-Registration is an Absolute Must

Contact Seth Jarvis, Project ASTRO UTAH coordinator to let us know which workshop you'll be attending.
Email: snj@clarkfoundation.org
Phone: (801) 583-5500

See you there!