SIDEREAL TIMES

The Official Publication of the
Amateur Astronomers Association of Princeton

Volume 32 | February 2003 | Number 2

From the Director

The Data Behind the Seeing

February 1, 2003. Although our editor probably won't believe me I actually got rolling early this morning with full intentions of putting together an article for this month's Sidereal Times. As usual for me I made the mistake of peeking into my email before I began to type my thoughts. A rather short note from my mother changed the day for me. "Too bad about the shuttle," she wrote. Many hours and umpteen newscasts later I am still half frozen by the loss of the Colombia and its crew. The future of science and our own beloved astronomy is tough enough as it is but disasters such as today's have a way of setting things back in unforeseen ways. Top that with connections to GPS guided smart bombs and one starts to wonder whether technology has any positive role at all in today's world.

Fortunately (for me and for Vic) there were two things that got me back to the keyboard as all the news came streaming in. First was the response from NASA to a reporter's question about whether astronaut training would continue: The best antidote to such an event, they said, is to focus on the task at hand and to continue to prepare for the future; The training will go on. Second, and more relevant to this article, I noted that much of the rest of the news reports concentrated on the need to capture every bit of data that might possibly be used to identify what went wrong so that it could be fixed. Indeed, this is the way we learn about everything. Bit by bit we gather little pieces of information and eventually we piece them together and learn to accomplish something new.

In my last article I alluded to this briefly when I described the process of learning to master all the tasks related to taking a successful astrophoto. It occurred to me today that even the experience of visual observing is made more enjoyable by the collection of data and that this is a practice any amateur should make an effort to hone. At our last meeting Ron Mittelstaedt showed me his recent copy of an observing guide to The Caldwell Objects by Stephen James O'Meara published by Sky Publishing. The book is a beauty and I have since acquired my own copy. What Ron showed me that really dazzled my fancy was a notebook he had put together to log observations of these objects. Years ago a friend of mine convinced me to keep a notebook of the objects I find in the sky and how I went about locating them. Although I haven't used it religiously it has been great fun to go back to my notebook and compare new observations of sky objects with those I made at previous times and locations. What seems to be the most difficult in this process is simply getting started. What Ron showed me last month was that there is a web site:

http://www.davidpaulgreen.com/ which contains pdf files for two very useful (and free!) observing logs for the Messier Objects and the Caldwell Objects.

(http://www.davidpaulgreen.com/tumol.html (Messier Log) and http://www.davidpaulgreen.com/tcol.html (Caldwell Log.) These documents give you all that you need to start tracking your observing efforts. Even if you already keep a log book you may find that filling out these charts helps you log enough data to make coming back to your observations a truly illuminating experience. So while NASA is busy mining its data streams to build a better shuttle, take a little time to gather your own data about your observations. Someday some of these little bits and pieces of information may actually teach you something new or lead you to your own astronomical discovery!

Kirk

Simpson Observatory (609) 737-2575

From The Program Chairman

This month we are going to take a break from cosmology and the origins of the universe. We are going to study a little history. On October 4, 1957 Sputnik I, Earth's first artificial satellite, was launched by the Soviet Union. Sputnik II followed on November 3 and Earth's third artificial satellite was sent into orbit on January 31, 1958. Launched by a 32-ton Jupiter-C rocket built by the Chrysler Corporation, Explorer it was the United States' entry into the race for space. Those of us, who are old enough, remember the Mercury, Gemini, and the Apollo missions and all of the excitement that went with man's exploration of space. Who can ever forget the competition between the United States and the U.S.S.R. to be the first to land on the Moon? All of these events were given complete coverage by the media and I still remember watching Walter Cronkite's reporting of the Apollo 11 landing and reading

(Program, continued on page 3)

Observations:

Cold Weather Observing Revised

Winter is upon us, the warm, muggy-buggy nights of summer are gone. The atmosphere has less haze which makes the sky much clearer to sight constellations and star-hop. You say it's too cold to venture out with your telescope. You can observe as often in the winter as in the summer if you are dressed right and have the right equipment. Who wants to miss the Orion Nebula, the Crab Nebula and the many open clusters the winter sky has to offer.

I can handle the cold, but it's the wind that makes my toes and finger start to numb. The wind makes it hard to stand still looking into an eyepiece for any length of time. My only suggestion is, try to refrain from observing on windy nights because body heat is lost quickly, and it makes the telescope shake on it's mounts where it is difficult to use high magnification. This is the case at Jenny Jump because it resides on top of a mountain and in a saddle point where wind speed is intensified.

The calm, clear, some-what cold nights can be enjoyed comfortably by wearing several layers of clothing. I start with insulated underwear, then a flannel shirt and jeans. I then wear an insulated vest, scarf, and a heavy coat. My gloves are actually mittens that can be folded back to expose my fingers to handle delicate eyepieces, focus knobs, or my sketching pencil. Most of the time my hands are exposed and are kept warm by sticking them in my pockets where each has a solid fuel heater. These heaters can be purchased from K-Mart or Wal-Mart for about four dollars each. I light the solid fuel sticks at each end for maximum heat and where they tend to stay warm for about three hours.

On my feet I find a thin pair of cotton followed by a pair of wool socks works best. Your feet may tend to sweat with the just the wool socks. The cotton is there to absorb the perspiration which cause your feet to loose heat, wet insulation is ineffective. My boots have 1000 grams of "Thinsulate" not so bulky that I can't drive with them on. Lastly wear a hat, most of your body heat is lost through your head (makes you wonder if there's anything up there to stop it). I prefer to wear the insulated baseball caps that sport ear flaps. I also have an Air Force fur hat where the ear flaps can be snapped together with a chin strap. My coat also has a detachable hood which I use when the temperatures really go down.

Take your observing equipment outside before you don the articles mentioned above and let your optical tube stabilize for about fifteen minutes. I sometimes observe with bare fingers and find that if I insulate the bare metal items on my telescope my fingers won't numb so fast. I do this by wrapping rubber bands around the top metal portion of the eyepiece. Another item is my observing chair. When I obtained my Tele-Vue Air Chair, Ralph already had his. His wife, Betty, made a nice cloth cushion to cover the cold "Nauga-hide" cover. I also bought a heatable pad to fit this chair. The pad can be reheated in a microwave oven and lasts for about three hours, more than enough time for a decent observing session in the winter months.

When observing in the summer, I have found that it takes up to an hour for the 11-inch primary mirror on my Schmidt Cassagrain to reach ambient temperature and the images to become stable. Another quicker way to bring in dry warm air in to the enclosed tube in the summer was found looking on the Astromart website. I found a company, Lymax (www.lymax.com) that sells a product call the "SCT Cooler." The principal is that a tube fits into the visual back through the baffle tube with a fan on the outside end. This blows in outside air and directs it on the primary mirror. I found the price a bit steep at $130. A trip to Radio Shack and the local hardware store found that such a product could be made for about $20. I bought the fan at Radio Shack for $8 and the balance spent on PVC tubing and adapters. Air Conditioner filter material at the exit end of the fan allows only clean air to enter my scope tube. After observing in cold temperatures and the scope is brought indoors, I also install this unit for about one hour which is more than enough time to allow the mirror to reach room temperature. This allows warm dry air to blow on the primary mirror thus condensation build up is eliminated.

Ron Mittelstaedt

From the Treasurer

The treasury balance is $XXXX.60 after the paying our insurance premium of $XXXX.00. There are 122 members.

Note: Michele, our publisher, will continue putting the dues renewal date on the upper right corner of each Sidereal Times address label. This the date that your renewal membership is due with the AAAP. Those with club magazine subscriptions to Astronomy or Sky and Telescope or both would want their subscriptions renewed about three months prior to the date of your club renewal. Please act accordingly, for if you wait until your club dues are due to pay for your magazine subscription you may miss one or two issues.

I am **not** going to send out renewal notices to members who get magazines, they get enough notices from their respective publishers. If I don't receive you renewal on the date indicated on your address label you will be dropped from the roster. If you are a keyholder, the respected observatory chairmans will be notified and you will be asked to return the key.

The dues structure is a follows:

$30 basic membership.

$60 for membership and subscription to Astronomy or Sky and Telescope magazine.

$90 if both magazines are desired with membership.

Note: If you have a Sky and Tel subscription please send the subscription notice and the postage paid envelope when renewing your membership.

Ron Mittelstaedt

Deadline for the submissions
of articles for the
March Issue of Sidereal Times
February 28, 2003

(Program, continued from page 1)

the headlines about man's first steps on the Moon in the Trenton Times.

Like just about every other American who was following the space race, I was completely ignorant of the fact that there was a second effort, began in 1957 by our government, to place astronauts on the moon and on the planets that make up our solar system. This effort was called Project Orion. This month's Guest Speaker, George Dyson, is going to tell us the truly fantastic story that was Project Orion, the United States' top-secret project to build interplanetary spaceships powered by nuclear bombs. Mr. Dyson has written a book titled ***Project Orion*** in which he weaves this fantastical tale into a story that is by far one of the most interesting in the history of the space race.

George Dyson's fascination with Project Orion began at an early age. When he was five years old, he learned about this project from his stepmother who happened to tell him about it on his way to school one morning. There were two reasons why Mrs. Dyson had knowledge of this project. The first was that the Atomic Energy Commission and the Department of Defense had just revealed to the press that the government had a project whose purpose was to build interplanetary spaceships powered by nuclear bombs. The second reason for telling young George about this spacecraft was that his father, physicist Freeman Dyson, who had been working on the project since the beginning of 1958, was going to be on board during one of its voyages out into the solar system.

I tried to write something explaining in detail what Project Orion was all about. However, after some time I came to conclude that George Dyson's description was better than anything I could write. Below is an excerpt from the Preface of his book.

> "Orion was the offspring of an idea first proposed, as an unmanned vehicle, by Los Alamos mathematician Stanislaw Ulam shortly after the Trinity atomic bomb test at Alamogordo, New Mexico, on July 16, 1945. It was typical of Ulam to be thinking about using bombs to deliver missiles, while everyone else was thinking about using missiles to deliver bombs…. Project Orion took place from 1957 to 1965 at General Atomic; a division of the General Dynamics Corporation established to develop peaceful uses for atomic energy, usually assumed to include everything nuclear except bombs. General Atomic was founded, in 1955, by Frederic de Hoffmann, a young physicist turned entrepreneur who sought to recapture the freewheeling spirit he had known at Los Alamos during the war. General Atomic attracted not only theoretical and experimental talent but the backing of politicians, financiers, and industrialists who, after the success of the Manhattan Project and its hydrogen-bomb successors, were eager to see what de Hoffmann's colleagues might come up with next. There was a narrow window of opportunity between the launch of Sputnik and the commitment of the United States to an exclusively chemical approach to space. It was only a time like this and a place like General Atomic that gave a proposal as unorthodox as Orion a chance. Where else could a thirty-two-year-old physicist show up for work the day after Sputnik, start daydreaming about how many bombs it would take to put something the size of a nuclear submarine into orbit and spend the next seven years—with the support of General Dynamics, the AEC, the Air Force, and, to a small extent, even NASA—making a serious effort to get the idea off the ground?" (You can read more at: http://www.space.com/spacelibrary/books/library_projectorion_020709.html)

Besides ***Project Orion***, George Dyson is also the author of ***Biadarka: The Kayak*** and ***Darwin Among the Machines: The Evolution of Global Intelligence.*** He left home at the age of 16, moving to British Columbia to build canoes and explore the Northwest Coast where he also spent some time living in a tree house 95 feet above the ground. In the book ***The Starship and the Canoe,*** author Kenneth Brower contrasted his resurrection of the biadarka, or Aleut kayak with his father's design for an interplanetary spaceship.

Intrigued? I know I am. This is a talk that should not be missed. Come and meet a fascinating man who has written a very fascinating book. I can think of no better way to enhance what I am sure will be a very interesting evening than by having dinner with our guest speaker. As usual, we will be meeting at The Annex Restaurant, 128 ½ Nassau Street at 6:00 PM. If you would like to come, please feel free to contact me by telephone at 609-393-2565 or by email at mal455@earthlink.net. By the way, before I forget. The University Store will be selling copies of ***Project Orion*** at the meeting on Tuesday evening. This would be an excellent opportunity to get an autographed copy for your home library. See you at the dinner or the meeting.

Mark Lopez

From the Editor

It looks like another superb program in this month's lineup from our Program Chairman Mark Lopez. When I first heard about Project Orion my mind jumped to my early teen years and reading the electrifying science fiction adventure by Jules Vern, "From the Earth to the Moon." But by those days Buck Rogers had already brought such ideas to the realm of possibility, a far cry from the fantasies of thought in 1873 when being fired from a giant cannon to the Moon was the chosen method of science fiction. It was a further surprise to have modern and respected scientists resurrecting such an old idea, proposing it for serious consideration and study.

When my son bought "Project Orion," by George Dyson and gave it to me for Christmas, he had no knowledge that Dyson would be our guest speaker in February. So I enthusiastically received it but must apologize that I haven't finished it as yet (tax season is a rough time for a financial officer to get into a good book). But I've read enough to know that it will be finished soon and that George is giving me precious insight to a personal side of his father, Freeman Dyson through the eyes of a boy growing up under the influence of a great man.

I would also like to remind members to hop onto our website and read the additional information posted there about Project Orion. Click on "Events" and then on "Guest Speakers." You will also see what other programs Mark has scheduled for all our meetings through May.

I want to thank Ron Mittlestaedt for updating his article on cold weather observing which has been included earlier in this issue. It is certainly appropriate considering the temperatures that we have

(Editor, continued on page 4)

Minutes of the
Regular meeting of the AAAP
January 14, 2003

The meeting was called to order at 7:57 PM.

Some brief comments were made about Super Science Weekend and appreciation was expressed to those members who assisted with it.

Mark Jaworsky presented the first of what is planned to be a series of short presentations by members at each meeting. Mark displayed his custom telescope case made of 0.5 inch plywood. Although the case is quite sturdy and handy, it is also somewhat heavy (about 20 lbs).

Program chairman Mark Lopez introduced the evening's speaker, Dr. Anthony Aguirre, who is a theoretical cosmologist at the Institute for Advanced Study at Princeton. The title of Dr. Aguirre's talk was "Modified Newtonian Dynamics: A Critical Study". The talk was well received.

Assistant Director and Webmaster John Miller said there was nothing to report on the web site.

Observatory Chair Rex Parker reported the observatory is in winter hibernation. Keyholders are welcome to use the observatory. Non-keyholders may call the observatory to see if any keyholders are there and then join them. Ron Mittelstaedt mentioned that the mount has been delayed again. Keyholder training most likely will resume in mid-February possibly again on Thursday nights.

An idea for a club program was discussed. Apparently some interest has been expressed in a training event from people who may have recently received telescopes for the holidays. Logistics for this event were discussed including location and other specifics. No decision was reached.

Program Chair Mark Lopez discussed the upcoming schedule and the cancellation of the scheduled March speaker. It was agreed to bring up Bill Miller's talk from May to March and find another speaker for May or use the May meeting for the telescope training event.

Treasurer Ron Mittelstaedt discussed insurance for the club and that costs had increased from last year. To control costs, he has increased the deductible from $50 to $200. The treasury stands at $XXXX.17.

Rex raised the question of when the club needs to start planning the next Starquest scheduled for June 27-29. It was agreed to discuss this at the next board meeting. The board meeting was set for February 6 at 7:30pm in Frist Hall.

Saul reported that the current membership count is 124 members.

The meeting was adjourned at 9:43 PM.

Lisa I. Yeh, Secretary

(Editor, continued from page 3)

been seeing lately. We may see another article on this topic next month from another of our more hardy observers who has other tips on this subject from his years of experience.

I would like to remind members again that this is your newsletter and we wellcome your creative efforts to grace our pages. If you have a project you have been working on or other astronomy experience this is a great place to share it with your fellow members. Excercize your fingers on the keyboard of your computer and send me your Microsoft Word document. Pictures are always helpful. If "Word" is not your word processor, most will create a file in .rtf format and send it to me by email; vic@apink.com. I know everyone is looking forward to seeing your contribution.

Letters to the Editor

Thank you for the sidereal Times, which I read with interest. However, it usually shows up in my mailbox two or three days after the monthly meeting. I have missed a number of good talks that way. Is there any possibility that you can mail it earlier?

[It is heartening to receive letters from members like this as it shows the Sidereal Times is an important service to them and we will continue to do our best to make sure it is as relevant as possible to everyone. The Times is the product of the efforts of many, those that submit the material, Michele who gets the letter printed and mails it , and all the club officers and committee members that keep the club moving with interesting activities to have a newsletter about.

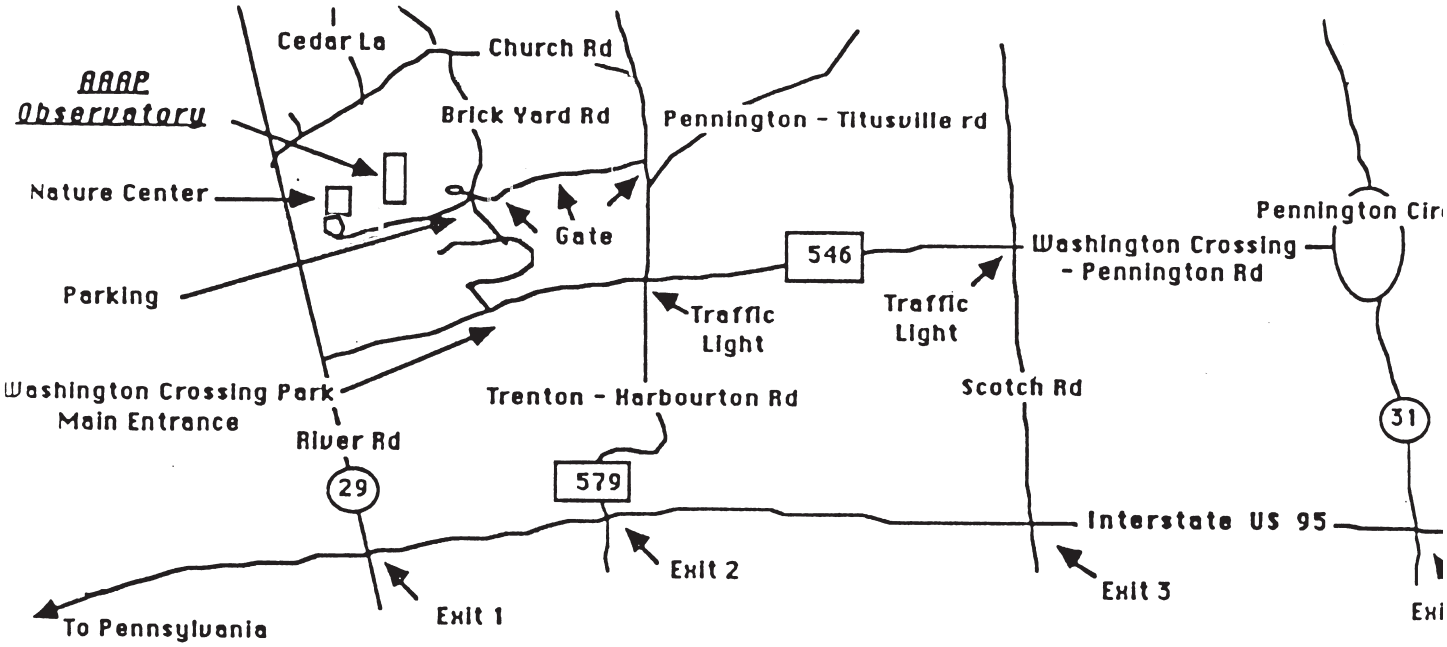
I try to get it out so that it arrives in mailboxes just before the meeting but also late enough to accommodate the many last minute changes in schedule that Mark Lopez has to juggle because of the busy and unpredictable calendars of our high caliber speakers.

I usually get my copy before the meeting date and I do ask others if they received a timely delivery. Most get theirs a day before I do. Never-the-less I apologize for the tardy delivery in you area. During the last quarter I was unable to keep as good a schedule as I would like due to special events in my family in late September, October, and December. Holiday seasons are tough for other volunteers as well but I have some suggestions that may help.

After I put the newsletter together and send it to Michele for publication, I also put it in .pdf format and John Miller posts it on the website. It can show up there up to a week before it hits the mailboxes. Additionally our meetings are always at 8:00 PM on the second Tuesday of the month and our speakers are always the envy of every other club in New Jersey. There is every reason to make as many meetings as you possibly can. ✐ed]

Its not too early to be thinking about
Jersey StarQuest '03
June 27-29, 2003
Got an idea for a new activity? or ...
Just want to help.
Call Kirk or Larry Smith.

Get Involved.



The best way to get to the observatory is to take Interstate 95 South towards Pennsylvania. Then take Scotch road at Exit 3 and proceed north (this amounts to right). Then, at the third traffic light take a left onto the Washington Crossing-Pennington road (County Route 546). Take this road to the first traffic light and take a right onto Trenton-Harbourton road (County Route 579). Take this road to the first driveway on the left, this is the Phillips Farm/Soccer Field entrance to the park. There is a series of three gates with club combination locks. If the gates are not open, you will need the lock combination to open the gate or be accompanied by a Keyholder member.

February 2003

Amateur Astronomers'
Association of Princeton
PO Box 2017
Princeton, NJ 08543