SOUTH SHORE ASTRONOMICAL SOCIETY
P.0. BOX 429, JACOBS LANE
NORWELL, MA. 02061

CALENDAR OF EVENTS

The next scheduled meeting of the South Shore Astronomical Society will be held on Wednesday, May, 4, 1988 at 8.00 PM at the South Shore Science Center. The program will be a lecture by John Nicholson.

ELECTION OF OFFICERS

The annual election of Officers will take place on June 1, 1988 during our regular monthly meeting. In addition to the normal slate of officers we will be electing six directors. These directors, in addition to our regular officers, will comprise the Board of directors required by our intentions to become incorporated under the laws of the Commonwealth of Massachusetts. The Nominating Committee presented the following slate of candidates during the April meeting.

- President..... Tom Stadelmann
- Vice President ... Bob Maguire
- Clerk .....Ed Barrett
- Corressponding Secretary...Michael Meyers
- Treasurer .... Bill Connors

Directors

- Bill Luzader
- Don Heywood
- Gabe Daher
- Dick Haskins
- Don Greeley
- Jim Barron

The membership is encouraged to submit additional names for consideration. These names must be submitted to the Nominating Committee prior to, or during the May meeting. New nominations may be submitted to our Corresponding Secretary Michael Meyers. Tel. 588-0673.

NEWS FROM NASA

Completion of modifications to the orbiter Discovery has emerged as the most critical milestone to meet the launch target date for the next space shuttle mission, according to Charles D. Gray, director of shuttle operations.

On-time delivery of flight hardware, including solid booster segments, and successful firing of Discovery's main engines are factors that will determine if NASA will be able to launch shuttle Mission 26 on Aug. 4.

An Aug. 4 launch is viewed as overly optimistic because it does not allow for mistakes or failures in the substantial amount of work remaining. a launch six to eight weeks later is said to be more likely. One orbiter modification that could disrupt the schedule is the installation and certification of a crew emergency egress system, which has not been selected. Another complication is that NASA has not yet decided whether any emergency escape will be mandated for the mission. NASA is expected to make this decision sometime in April.

Two crew escape designs are under consideration, a tunnel/rocket ejection assembly and a slide pole system.

On another note; the National Aero-Space Plane project officals are making progress in developing an aircraft that can take off from a runway and fly into space. The $3.3-billion program is the largest experimental aircraft project ever undertaken by the U.S. The first X-30 flight is not likely until 1994-95.

SOUTH SHORE ASTRONOMICAL SOCIETY

INCORPORATION
A NEW ERA

The South Shore Astronomical Society is in the process of incorporating under the laws of the Commonwealth of Massachusetts. This change in our society's structure will benefit the general membership in many ways. The advantages of incorporation has been discussed during our monthly business meetings on many occasions. A committee was formed earlier in the year to study the pros and cons of this issue with favorable results. The members at large have voted to proceed with this change in our operating structure.

The prime advantage of the new corporation is the protection it affords the membership against potential personal liability should an accidental mishap occur during a club sponsored event. We have now taken out separate liability insurance to provide coverage in the interim.

In addition to the normal club officers, corporation law requires that a board of directors be elected by the general membership. These new directors, along with the officers, will be responsible for conducting normal club business. The board will meet separately and report to the membership, during the scheduled monthly meeting, the business discussed and action taken. This should help shorten the business portion of our meetings and allow more time for instructional and educational programs.

The Board of Directors will also be responsible for providing the program during our monthly meeting, to assure varied and informative programs. A task previously undertaken by the Vice President alone. *Lets get behind this new endeavor and make it work .*

A SPECIAL THANKS TO
ROLF EGON

After leading the South Shore Astronomical Society successfully for several years Rolf Egon is stepping down as our president . Rolf's untiring efforts, on our behalf, is the *glue* that has held our society together during both good times and trying times.

Filling Rolf's shoes will not be easy and will require heroic effort on the part of not only our new president and club officers, but the membership as a whole.

Rolf, ***singlehandlely***, has fulfilled the South Shore Astronomical Society's obligations to the Norwell Science Center by giving many lectures there, with little or no outside help. It is these lectures which allows us to meet, rent free, at the Science Center. Rolf has always devoted much time and effort in organizing and participating in the many special events that take place during the year. All that Rolf has ever asked for in return is a little help.

We can all thank Rolf, in a meaningful way, by giving our full support and cooperation to our new president and by supporting our society's goals.

The good news is that Rolf still plans to be an active member of our society and as such can still provide much guidance and leadership to the rest of us.

Thanks Rolf, from all of us, for a job well done.

SOUTH SHORE ASTRONOMICAL SOCIETY

OBSERVATORY COMMITEE REPORT

Although the South Shore Astronomical Society has abandoned plans for the construction of a domed observatory, we still have plans to enlarge our present observatory. The new annex will provide additional space and comfort for the users during cold winter weather.

The new addition will be segregated from the main building, by a light tight corridor, and will be electrically heated for winter use. After a long cold observing session a user may retire to the comfort of a heated room to, consult a star chart, or to have a cup of coffee. Users awaiting a turn at the telescope could wait in a warm environment. The room would be equipped with normal lighting but will also include red lighting for those times when it would be necessary to protect a user's night vision. Seating would also be provided to relieve tired sore feet. Ideas by the membership for additional useful features are solicited by the Observatory Committee.

Other ideas include a clock drive for our 10 inch Cassegrain telescope. This feature would permit astro-photography and other types of serious astronomical research which is out of our reach at the present time. We also hope to make the observatory more accessible and more available for use by our members.

When the final plans are made, and approval obtained from our Board of Directors and the Science Center, a presention will be made to the membership at one of our scheduled monthly meetings. This is a major project that will require the cooperation and *help* of everybody.

POWERS OF TEN

Critics of the federal budjet usually will refer to the funding as "astronomical," a reference to the large numbers used for the vast distances involved in astronomy. The nearest star to the sun, for instance, is 40,500,000,000,000 km away, and other distant stellar objects are hundreds of millions of times still further away. To avoid counting the number of digits to the left of the decimal point, a convenient shorthand can be used; 40,500,000,000,000 equals 4.05×10^{13}, where 13, the *exponent* or *power of ten*, counts the number of places the decimal point was moved to the ***left*** to arrive at the 4.05. At the other extreme, 0.0000000000218 (the energy in ergs required to ionize a hydrogen atom) is written 2.18×10^{-11}. This shows that the decimal point was moved eleven places to the ***right*** to give the value 2.18. Not only is the power of ten much easier to read and write, but it makes computation much easier when dealing with large numbers. An object moving at 1% (or 10^{-2}) of the speed of light (3×10^{10} cm/sec) would move at 3×10^{8} cm/sec. That is, dividing by 100 is equivalent to moving the decimal point two places to the *left* or *subtracting* 2 from the exponent. Subtraction is much easier than normal division, life is much simpler when we can perform division by subtracting exponents. For example, the density of the planet Mercury is its mass divided by its volume. Mercury's mass is 3.2×10^{26} grams and its volume is 6.0×10^{25} cubic centimeters (written cm^3). Hence the density is 3.2×10^{26} divided by 6.0×10^{25}, or $(3.2/6.0) \times 10^{(26-25)}$, or 0.54×10^{1}, or 5.4 g/cm^3. To multiply using powers of ten, add the exponents. If we know that the sun is 1.5x108 km from earth, and the nearest star is 2.7x105 times farther away, the star is (1.5x2.7)x10(8+5) km, or 4.05x1013km away.