



GREAT LAKES PLANETARIUM ASSOCIATION

NEWSLETTER

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EDUCATIONAL VALUE OF TRAVEL TIME

By Gerry Muhl
Strasenburgh Planetarium, Rochester, N.Y.

In planning a visit to a planetarium, teachers often overlook the hour (or more) traveling time necessary in getting to and returning from the planetarium. This time should be considered as a potential learning experience and should be treated in the same manner.

Once a teacher is convinced that the school bus ride can in itself have positive pedagogical implications, and this is no small hurdle to overcome, the next step would be the creation of objectives that the bus ride can meet. Finally, the writing of activities themselves can begin. Rather than approach the problem within the confines of a single discipline it would seem that an interdisciplinary approach would be more practical. Objectives could include the communicative arts with the students instructed to notice various methods of outdoor advertising; a lesson in urban geography and land usage; the social sciences; architecture; agriculture; ecology; or geology to note a few.

In regard to astronomy and the Space Sciences a number of activities suitable for different grade levels immediately come to mind. The following is a list of some activities that I suggest to teachers using the Strasenburgh Planetarium in Rochester, New York:

1. While on the bus, have the students determine which direction the bus is heading by observing the changing position of the sun.
2. Divide the bus into two sections and have one side ask the other side prepared questions. Keep score.
3. Sing an astronomically related song (for young students). A source for records and song sheets is NASCO Science Materials, Ft. Atkinson, Wisconsin 53538.
4. While on the bus, have the students map the route the bus is taking in getting to the Planetarium.
5. Imagine the bus as a space craft. Have the students prepare short reports, to be given on the bus, listing items they would need if they were heading into outer space. A portable tape recorder might add to the realism.
6. Gather various pictures of the earth, of space, and of the moon. Have the students decide where each picture was made and the reason for their decision.
7. As a project in class have the students construct a scale model of the solar system using the distance from your school building to the planetarium as the

scale distance from Pluto to the Sun. Using maps of your projected route plot where each planet would appear in the country. On the bus have the students name the planet they are nearing by observing various predetermined landmarks.

8. Be creative.

This list is by no means definitive. More activities could readily be created by those planning planetarium visits.

Some practical points to consider in planning the bus ride as part of the learning experience must also be mentioned. The use of pencils or hard point pens should be discouraged for safety reasons. In their place soft point felt tip pens could be substituted. Secondly, be sure to plan well in advance with the school district transportation officer to determine what route the bus will take on the "field trip" and be ready to suggest alternate routes. Finally, make the trip yourself in advance so that you will be qualified to point out various noteworthy sights.

Planning for the bus ride would involve more effort on the part of the teacher; the results, however, would be manifold. It is clear that if maximum results are to be gleaned from a field trip experience, every aspect must be considered.

THE REAL MOON ILLUSION

By George Lovi
Viewlex Inc.

One of the most shopworn of astronomical phenomena is the classic "moon illusion" whereby the moon appears larger near the horizon than when higher in the sky. A number of psychological explanations have been advanced for this, some better than others. For what it's worth, it seems to me that a major reason is a perceptive process whereby an object at a given distance appears smaller when one has to look up at it. For example, I recall that as a youngster living near a rapid transit elevated line, I was mystified at how much smaller trains appeared when seen from the street than from a station platform - even though they may have been further from me in the latter instance.

Nevertheless, this is not the real moon illusion. The real illusion is the moon's apparent size in the sky - anywhere in the sky - versus how large it appears to us. Referring to books, we find that the moon's apparent diameter is $1/2^\circ$. Now let's look at the pointer stars in the Big Dipper, Dubhe and Merak. Referring to a catalogue, we find that they are $5-1/3^\circ$ apart. This means that more than ten full moons could be lined up in that space. No? Now go out some full moon night and, looking up at the Big Dipper, try to imagine ten full moons between Dubhe and Merak. Incredible! Maybe three or four, but not ten.

The fact is, that when comparing the moon's size with constellations, it is utterly impossible to reconcile it as being only half a degree across. Therefore, the moon's apparent size in the sky should never be used to estimate angular distances. Incidentally, all planetarium projectors show the sun and moon a degree or more in diameter; otherwise they would seem ridiculously small.

Here is the real moon illusion - an illusion far more incredible than the horizon version.

AN OBITUARY

On Wednesday, April 14, 1971, Armand N. Spitz succumbed to a prolonged illness at his home near Washington, D.C. He was 69 years old.

Born in Philadelphia, Dr. Spitz attended the Universities of Pennsylvania and Cincinnati, and was awarded a Doctor of Science degree from Otterbein College, of Westerville, Ohio, in 1956.

As Director of Education of the Franklin Institute and lecturer at the Fels Planetarium, Armand Spitz became fascinated with the potential of the planetarium as an educational and motivational device. At that time, planetariums were all located in large cities. Determined to bring the beauty of the planetarium to more people, he conceived and built his first small planetarium, and in 1947 founded Spitz Laboratories. Today, because of the vision, vitality, and human warmth of Armand Spitz, hundreds of planetariums located in schools, colleges, and museums throughout the world are visited by millions of people each year.

Throughout his life, Armand Spitz was passionately concerned with education, and was particularly active in teaching children and adults about the beauty of man and the universe. He was Associate Editor of The Monthly Sky Map and Popular Astronomy, and also authored several articles and books on education and astronomy, as well as meteorology.

In 1956, he was appointed Coordinator of Visual Satellite Observations for the Smithsonian Astrophysical Observatory, and served as consultant to that Institute through 1961. He was also a consultant to the National Science Foundation.

Dr. Spitz is survived by his wife, the former Grace Scholz; a daughter, Mrs. Edward G. Rice; a son, Lawrence, and one grandchild.

Several friends of Armand and Grace Spitz have considered various ways in which individuals might manifest their feelings at this time. Accordingly, the Armand N. Spitz Memorial Fund has been established. It is temporarily being administered by a committee chaired by Von Del Chamberlain of Michigan State University. A memorial book listing contributions will be maintained and a copy eventually transmitted to the family of Armand N. Spitz at a later date. A permanent committee, in consultation with Mrs. Spitz, will decide on the use of the fund.

NEWS NOTES

THE 1971 CONVENTION OF THE GREAT LAKES PLANETARIUM ASSOCIATION will be held October 7th, 8th, and 9th at the Mount Clemens High School, Mount Clemens, Michigan. An excellent program is planned under chairmanship of host Jim Pike. There will be a field trip to the Bendix Systems plant in Ann Arbor, (where spacecraft electronics are made) and one to the University of Michigan Observatories on Thursday, the 7th, with seminars and demonstrations scheduled for Friday and Saturday. Although the list of speakers is only partially complete at the present time, Dr. Allen Hynek, who is chairman of the Department of Astronomy at Northwestern University and Air Force consultant on unidentified flying objects, will give the Armand Spitz Lecture. Also, Dr. Barnett Rossenburg will speak on life in the universe. One of the scheduled seminars will be devoted to sharing materials and ideas appropriate for a high school astronomy course. It is hoped that members will submit papers. Any suggestions, ideas, or contributions should be sent to Jim Pike, Mount Clemens High School, Mount Clemens, Michigan 48043

THE CONSTITUTIONAL COMMITTEE, appointed at the C.A.P.E. convention last fall, met at Baton Rouge, Louisiana on March 27th and 28th, at the invitation of the Department of Physics and Astronomy at Louisiana State University. Present were acting chairman Paul Engle, Jack Howarth, James Hooks, Rich Calvird, Sig Weiser, and VonDel Chamberlain. The Committee met in four sessions and worked hard to draft a first copy of by-laws for a society of planetarium educators. The tentative series of by-laws will be further reviewed and revised by the committee, and then submitted to the delegates of C.A.P.E for ratification.

THE MINNAERT MEMORIAL CONFERENCE ON EDUCATION AND THE HISTORY OF MODERN ASTRONOMY will be held from August 30th through September 1, 1971 at the American Museum-Hayden Planetarium in New York City. This affair is being jointly sponsored by the American Astronomical Society and the New York Academy of Sciences, and will feature internationally renowned astronomers discussing their historic discoveries. There will also be presentations on "The Education and Employment of Astronomers in the U.S.," "University Level Astronomy Education for Non-Science Concentrators," and "Personal Accountings of the Development of Modern Astronomy," to name a few. Further information can be obtained from the conference chairman, Dr. Richard Berendzen, Department of Astronomy, Boston University, 725 Commonwealth Avenue, Boston, Massachusetts 02215.

THE SPITZ McGRAW-HILL SUMMER INSTITUTES IN PLANETARIUM EDUCATION will hold two series of two institutes apiece, one series on the East Coast at their Chadds Ford, Pennsylvania laboratories, and the second in Los Angeles. These institutes are designed to provide new and experienced planetarium teachers with intensive study in the methods of effective planetarium educational use. Each series consists of two independent one-week courses, which may be taken separately or together. The first week generally stresses use of the planetarium on the elementary level; the second week, use on the secondary and college level. Cost is \$75 per week, with food, travel, and lodging the responsibility of the participant. Contact Michael Bennett, Director of Education, Spitz Laboratories, Chadds Ford, Pennsylvania 19317.

THE PLANETARIUM ASSOCIATION OF CANADA will hold its 1971 conference in late August. Included on the program, which will be held at the Centennial Planetarium of the Manitoba Museum of Man and Nature, will be the first Omnitheatre production, "The Beginning and End of the world." Inquiries should be sent to Donald D. Davis, Planetarium Director, Manitoba Museum of Man and Nature, 190 Rupert Avenue, Winnipeg 2, Manitoba, Canada.

THE 2ND ANNUAL GREAT LAKES ASTRONOMY SYMPOSIUM was held in Toledo, Ohio on May 15th. This one day event is sponsored by the Adams Astronomical Society of Rogers High School in Toledo, and features presentations delivered by professional astronomers who are there to "rub elbows" with amateurs from Toledo and surrounding regions. Your editor and two of his colleagues were fortunate to attend this event for the first time, and were greatly impressed to say the least. The addresses delivered by such notables as Dr. Peter Van de Kamp and Grote Reber were both intellectually stimulating and amusing, and the Ritter Observatory and Planetarium proved to be a fascinating place to visit. Your editor and his colleagues were in unanimous agreement that it was one of the most stimulating sessions they had ever attended. A great deal of credit for the success of the symposium must go to Robert Gardner, a G.L.P.A. member and sponsor of the astronomy club at Rogers High. It is obvious that he is highly respected by his students, and thereby is able to get the student response and enthusiasm necessary to pull off such an elaborate symposium. There were over 100 people there; many more should try to make it next year.

THE FOURTH ISSUE OF THE PROJECTOR will appear a bit later this year. At a meeting of the G.L.P.A. Publications Committee, it was decided that volume of material and finances warranted publication of at least one more issue. Eventually, it is hoped that the Projector will be absorbed in a new international trade journal. The co-chairman of the

C.A.P.E. Publication Committee, Frank Jettner, is actively engaged in promoting birth of the larger journal.

THE PUBLICATION "ASTRONOMY" - The curriculum used in the West Lake, Ohio Junior High School, is available on request from Robert Elliott, Phillips Planetarium, Wisconsin State University, Eau Claire, Wisconsin 54701. The curriculum was developed by Mrs. Jeanne Bishop, who has long been active in planetarium work and the G.L.P.A., and contains a great deal of material appropriate to planetarium presentation. There is no charge for the 24 page booklet.

POSITIONS AND PERSONNEL

THE JESSE BESSER PLANETARIUM of the Besser Museum in Alpena, Michigan announced a vacancy in the position of Planetarium Coordinator. The responsibilities of this job include planetarium curriculum development and lecturing to a county-wide school system, preparation of public programs, and design of space-oriented exhibits. Secretarial, technical and part-time lecturing personnel are available. The facility includes a Spitz A3P projector under a 30 foot dome. Salary is negotiable depending on background and experience. Requirements include a bachelors degree in astronomy or a related field and strong interest in the educational potential of the planetarium. Send resume to Cynthia Murphy, Jesse Besser Museum, 491 Johnson Street, Alpena, Michigan.

MR. VALENTINO M. GONZALES, 122 Charles Street, Wilkes Barre, Pennsylvania 18702, is interested in obtaining employment in a planetarium. Mr. Gonzales was director of a Spitz planetarium and small observatory at Florida State University for 3 1/2 years while a student at the University, and since then has completed 8 years as a navigator with the Air Force. Contact Mr. Gonzales at the above address for further information.

RICHARD A. PALERMO, 16 Westwood Road, Storrs, Connecticut, would like to be considered as a candidate for a planetarium lecturing position. He was graduated from the University of Maine last June and recently completed a four months tour of duty with the Army National Guard. He majored in history with a double minor in mathematics and physics. He is an amateur astronomer and photographer. He was a student lecturer at the University of Maine Planetarium and is very interested in a planetarium career.

DONALD D. DAVIS, formerly director of the Dow Planetarium in Montreal, is now director of the Centennial Planetarium of the Manitoba Museum of Man and Nature, Winnipeg, Manitoba, Canada.

DON STARKEY, who for many years was associated with the Fort Worth Childrens Museum and its Charlie Noble Planetarium, is now director of the planetarium at the Oregon Museum of Science and Industry, Portland.

AN IDEA

By Dorothy E. Beetle

For those with access to rocks and minerals, you might put up an exhibit of earth rocks and minerals similar to those found on the moon. After reading current issues of Sky and Telescope, Science, and NASA - Apollo Lunar Sample Information, I searched through our museum collections for terrestrial material of similar composition. We have an extensive collection at the museum which was bequeathed to us upon our opening, so I was able to find examples of all the main rock and mineral types.

The display is divided into 2 groups, the darker rocks of the basalt lava plains and the lighter anorthosites of the highlands. Photographs from lunar missions pinpoint specific areas. The planetarium program is concurrently presenting Moon Rocks -

How They Change, a discussion with a slides of the formation of the regolith by meteor strikes and mass wasting and some mention of transitory lunar phenomena. This letter is based on information presented at the CAPE meeting last fall - after Green, Middlehurst, Wilkens, Moore and Stein. - from the "Constellation," Newsletter of the Middle Atlantic Planetarium Society.

THE GREAT LAKES PLANETARIUM ASSOCIATION offers membership opportunities to all individuals in any way connected with the operation of planetariums. The only pre-requisite for membership is a sincere interest in and sympathy for the objectives of the Association and payment of annual dues. Annual membership dues are \$5 per individual, to be paid annually at the time of the autumnal equinox. General correspondence and membership application should be submitted to Mrs. Maxine Haarstick, Planetarium of the Minneapolis Public Library, 300 Nicollet Mall, Minneapolis, Minnesota 55401. Contributions to the Projector, official G.L.P.A. journal, should be submitted to Mr. John Christian, Robert T. Longway Planetarium, 1310 E. Kearsley Street, Flint, Michigan 48503. Contributions and notices for the quarterly "Newsletter" should be sent to David L. DeBruyn, editor, Roger B. Chaffee Planetarium, 233 Washington, S.E., Grand Rapids, Michigan 49502. Deadlines for contributions to the latest "Newsletter" fall at the beginnings of the four seasons.