WESTMINSTER ASTRONOMICAL SOCIETY
of Carroll County, Maryland

Newsletter for January 1985, Vol 2 No 1

January Business Meeting The January meeting will be held at 7:30 p.m., Wednesday January 30, in Room 111, Lewis Science Hall, Western Maryland College, Westminster.

A number of activities are planned. Foremost is the election of the five club officers. Apart from any other business that comes up, the remainder of the time will spent planning club activities for Astronomy Day in May.

Elections Five elected offices are open for nomination and election at the January meeting. These offices, as described in the club constitution are:

President - Organizes/conducts monthly meetings and club activities. Calls meetings of Executive Committee; appoints non-elected offices.

Vice President - Assumes duties of President when President is absent. Public relations and notifies press of upcoming events.

Secretary - Maintains official society membership list. Corresponds with potential new members. Records and files minutes of meetings.

Treasurer - Responsible for funds in treasury. Collects dues and pays bills. Prepares financial statement for yearly business meeting.

Director at Large - Society member in good standing elected to the Executive Committee. Performs other duties as needed.

Any member of the Westminster Astronomical Society at the time of the election is eligible for office. Paid members as of January 1 are the following:

WAS Membership List

Name	Type	Address	ZIP	Phone
Tom and John Appler	Family	737 Lees Mill Rd, Hampstead	21074	239-8070
Todd Bonner	Single	518 Geneva Dr., Westminster	21157	848-7839
Mike Potter	Single	2809 St. Paul St, Baltimore	21218	235-2017
Cliff Richards	Family	338 Leyton Rd, Reisterstown	21136	833-8247
Blaine & Frank Roelke	Family	6700 Keysville Rd, Keymar	21757	756-2886
Curtis & Cheryl Roelle	Family	3481 Salem Bottom Rd, Westminster	21157	848-6384
W. Eugene Sterner	Single	4625 Old Hanover Rd, Westminster	21157	346-7725

There can be an office for everyone, elected or appointed, so decide what you would like to be and then hint around that you want to be nominated.

Astronomy Day Astronomy Day is coming soon in May so now is the time to plan our activities. Aggressively promoting Astronomy Day in Carroll County serves two purposes. First, since WAS is the only astronomy club in the county it is our duty to be a source of information for the public. Many people are curious but do not know where to direct their questions. If they know where to find us on that one day, perhaps they will come.

Second, Astronomy Day provides exposure for the club. A.D. provides an opportunity to toot our own horn through the press and media thus attracting potential members. To get the most out of Astronomy Day, we need to start planning as early as possible.

New Books Available From League The Astronomical League has copies of several new publications available at a discount. Former League president Jerry Sherlin described the following three in a telephone conversation:

> British Astronomical Association Star Charts - These handy charts by the celebrated Dutch cartographer Will Tirion are being offered at a 15% discount. The six charts show stars down to magnitude 6.5, and are perfect for beginning astronomers. The BAA star charts are the same as those featured at November's meeting except with black stars on a white background. Retail priced at $9.95, they may be ordered for $8.50.
>
> Check a Possible Supernova - This book containing 40 detailed photographs of selected galaxies and surrounding regions is intended to be used by amatures during supernova search patrols. The negative prints (black stars on white background) reveal more detail than similar positive prints. These charts are intended as a reference when checking distant galaxies for possible supernovas. This is a worthwhile activity for amatures, as professional astronomers often do not have sufficient time to carry on this work. Regularly priced at $5.50, a 10% discount makes the price $4.95.
>
> The Light-Hearted Astronomer - The subject of mixed reviews, this controversial book pokes fun at the hobby of astronomy in a tongue-in-cheek style. With a 10% discount this book is yours for $6.30.

This is intended for your information. If interested in ordering any of the above, call Curt Roelle, or indicate your choice(s) at the star party or meeting.

Space Station Series Concludes The last installment of the four part U.S. manned space station series provides a look at preliminary designs for the orbiting station. The following publications were used in preparing this series: Aerospace America, Astronomy, Aviation Week, and Photonics Spectra.

January Star Party Planned The star party scheduled for last month was fogged out and has been rescheduled for 7:00 p.m. January 18th, at Blaine Roelke's observatory in Keymar. See the December newsletter for directions, or call Blaine at 756-2886. As usual if the weather is threatening, call before coming. If thwarted by clouds, the party shall be held the following night,

Saturday January 19th.

Planetarium Series at Gettysburg Gettysburg College is presenting a series of Sunday afternoon shows in its Hatler Planetarium. Each month a new show will be shown twice on one Sunday only, at 1:00 p.m. and 3:00 p.m. The schedule for four months are:

Hatler Planetarium Schedule, Gettysburg

Sunday	January 27	1:00/3:00 p.m.	"Between the Stars"
Sunday	February 17	1:00/3:00 p.m.	"Realm of the Galaxies"
Sunday	March 17	1:00/3:00 p.m.	"Cycles of Time"
Sunday	April 21	1:00/3:00 p.m.	"Mysteries of the Sun"

WAS will be going to either of the the January 27 shows. Those interested in going can sign up at the meeting, or call Curt Roelle at 848-6384.

Gilmer Adjusts Titius-Bode at December Meeting When the Titius-Bode law was introduced in 1772, the known solar system consisted of the Sun, Mercury, Venus, Earth, Mars, Jupiter, and Saturn. With this new "law" Titius-Bode predicted that a planetary body existed which orbited the sun, located between the orbits of Mars and Jupiter. In 1801 Ceres became the first asteroid in the now famous belt to be discovered, located between these two planets just as predicted. Titius-Bode also predicted the possible existence of a planet beyond Saturn. In 1781 William Herschel discovered the planet Uranus at the distance predicted by Titius-Bode. Two stunning victories for the law.

However the later discoveries of Neptune and Pluto, in 1846 and 1930, showed how the accuracy of Titius-Bode quickly decreases with distance. The discovery of Chiron in 1977, a distant asteroid beyond Saturn's orbit, prompted Harrisson Gilmer to reevaluate Titius-Bode. Using Newton's Law of Finite Differences, Gilmer obtained a new equation for generating planetary distances from the sun. The solution shown below gives the distance in tenths of astronomical units (1 A.U. is the distance between the Sun and Earth, approx. 93,000,000 miles). The formula for units other than A.U.'s is easily derived as demonstrated by Gilmer. Nevertheless, this form of Gilmer's equation of planetary distances is convenient:

$$\text{Distance in tenths of A.U.} = 4 + 3n + n(n-1)(n-2)/2$$

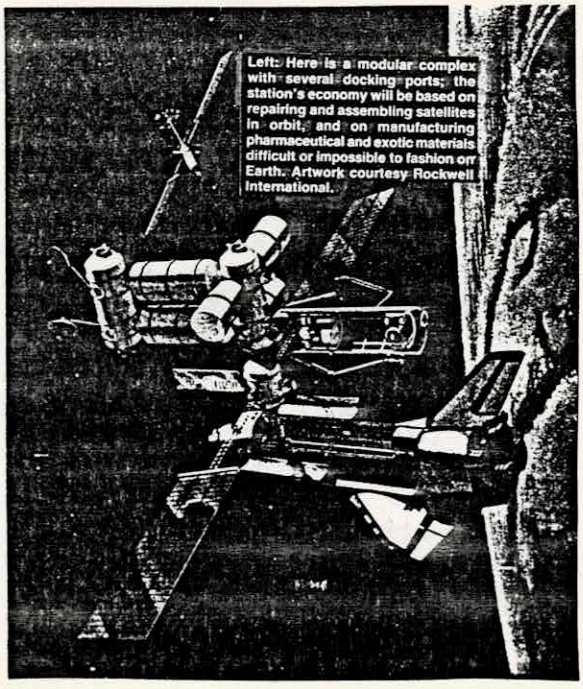
Where n = 0,1,2,3... corresponding with the position of the planets away from the sun. For example n=0 represents Mercury, n=1 is Venus, and so on. A comparison of the actual distances and distances predicted by Gilmer's formula is shown in the following table for the planets and two major asteroids:

n/PLAN	0/MER	1/VEN	2/EAR	3/MAR	4/CER	5/JUP	6/SAT	7/CHI	8/URA	9/NEP	10/PL	11/PX
ACT.AU	0.39	0.72	1.00	1.52	2.79	5.20	9.54	13.7	19.2	30.1	39.4	????
PRE.AU	0.40	0.70	1.00	1.60	2.80	4.90	8.20	13.0	19.6	28.3	39.4	53.2
ERR.%	+3.3	-3.3	0.0	+5.0	+0.7	-5.8	-14.0	-5.1	+2.2	-5.5	0.0	--

Actual vs. Gilmer's planetary distances

Except for Saturn's -14.0%, all predicted values are within the acceptable seven percent "engineering error", with distances for Earth and Pluto being exact. Could it be that the engineer of our solar system was aware of Gilmer's equation? Gilmer uses his formula to determine that the distance of the much debated Planet X is 53.2 A.U. from the sun. Observation of this hypothetical planet has eluded observers for many years, never allowing its existence to be proved, or disproved. If Planet X is one day discovered at the predicted distance, Harrisson Gilmer could shock the world by proclaiming "I told you so!"

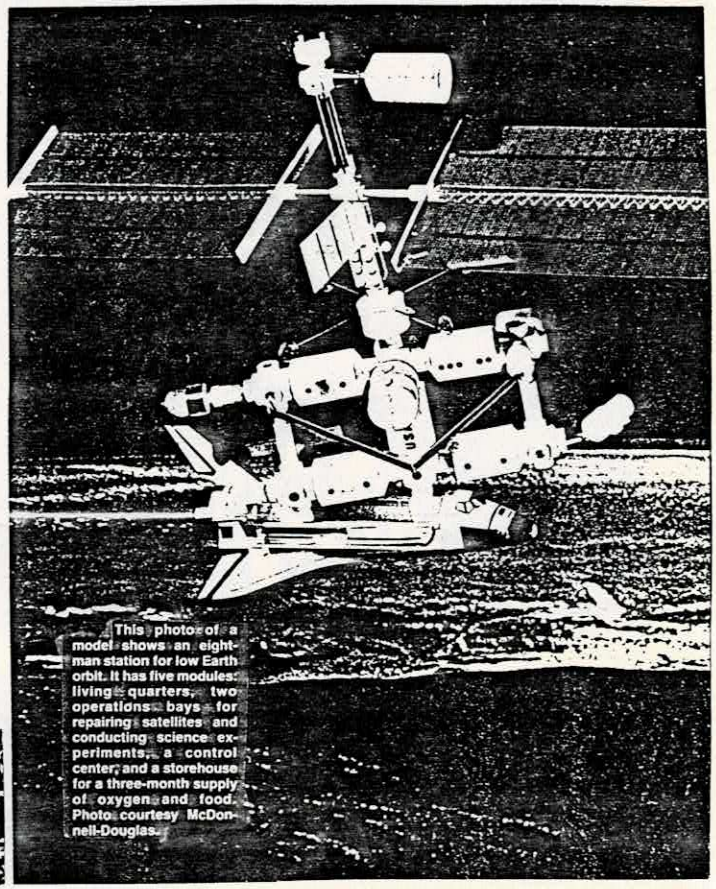
Space Station IV: Look! Up In the Sky! On these pages are artist conceptions (or deceptions) of NASA's permanently manned space station by several major aerospace contractors. Included are designs by industrial giants such as TRW, Rockwell International, McDonnell Douglas, Boeing, General Dynamics, Martin Marietta, Grumman, and Lockheed.



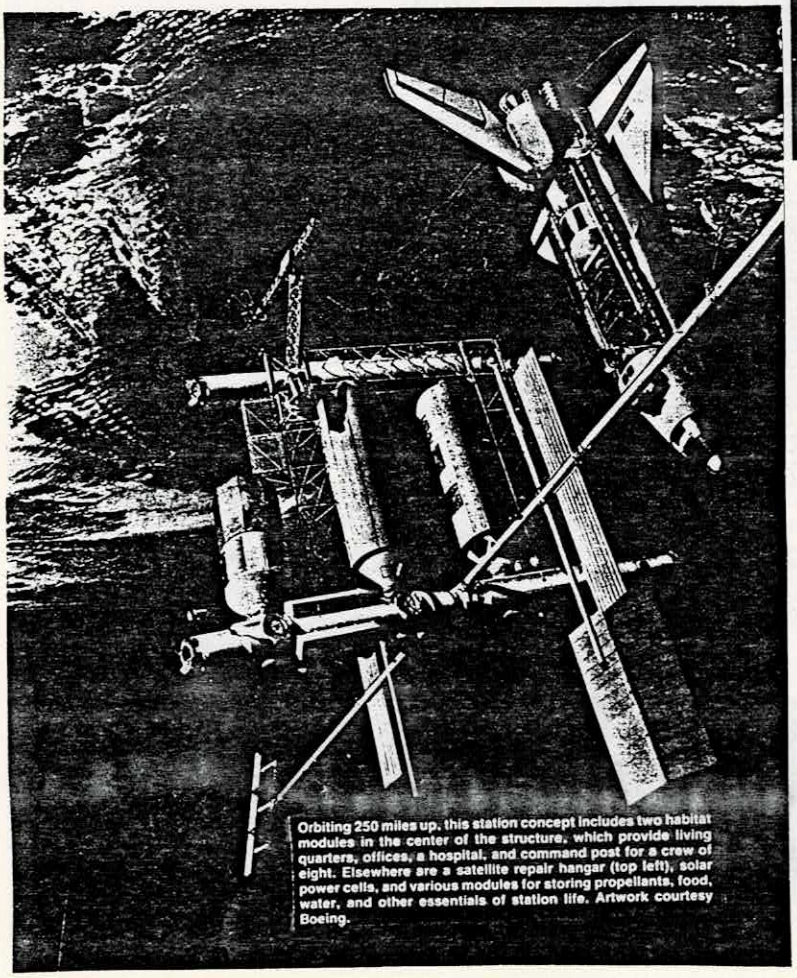
TRW

Rockwell International

MCDONNELL DOUGLAS

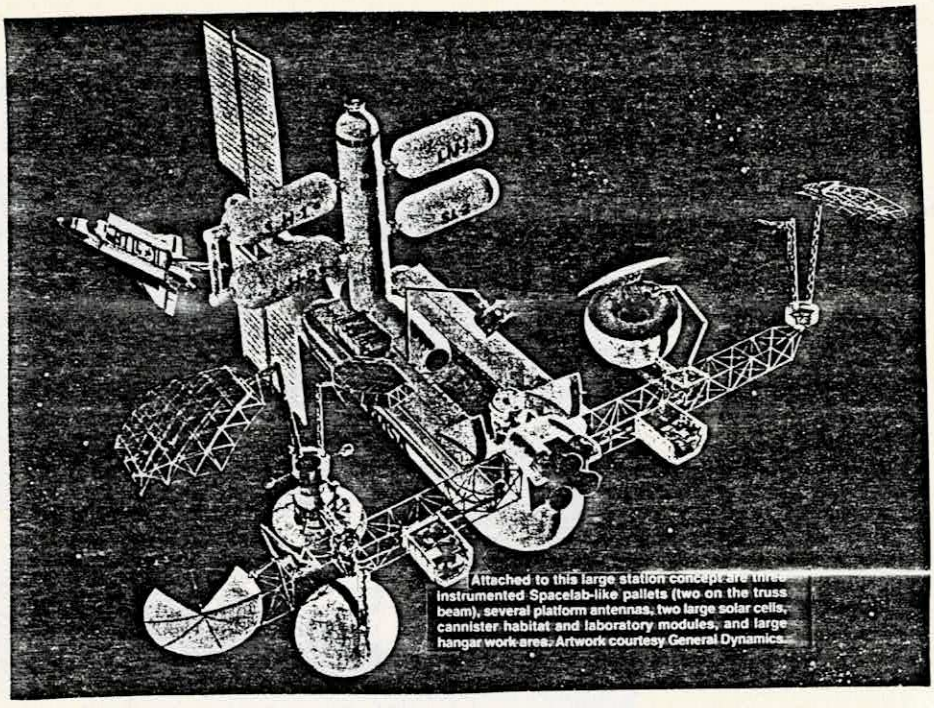


This photo of a model shows an eight-man station for low Earth orbit. It has five modules: living quarters, two operations bays for repairing satellites and conducting science experiments, a control center, and a storehouse for a three-month supply of oxygen and food. Photo courtesy McDonnell-Douglas.



Orbiting 250 miles up, this station concept includes two habitat modules in the center of the structure, which provide living quarters, offices, a hospital, and command post for a crew of eight. Elsewhere are a satellite repair hangar (top left), solar power cells, and various modules for storing propellants, food, water, and other essentials of station life. Artwork courtesy Boeing.

BOEING

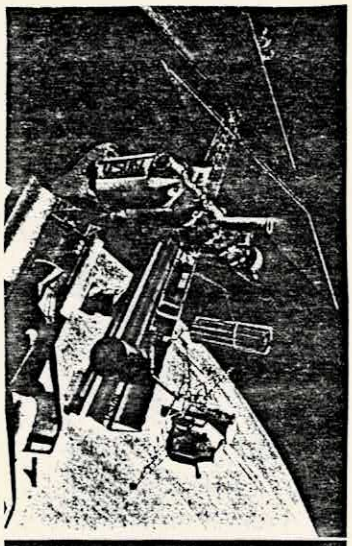


Attached to this large station concept are three instrumented Spacelab-like pallets (two on the truss beam), several platform antennas, two large solar cells, cannister habitat and laboratory modules, and large hangar work area. Artwork courtesy General Dynamics.

GENERAL DYNAMICS

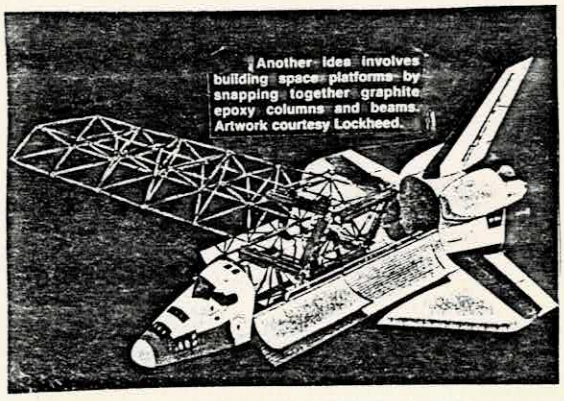
Telescopes, sensors, and other instruments extend from this multi-deck space station. Intended to house 16 crewmembers or more, this station would be launched from the Earth with an external tank of its own; later Shuttle flights would ferry crew, supplies, and additional modules to expand the facilities. Artwork courtesy Martin Marietta.

MARTIN MARIETTA



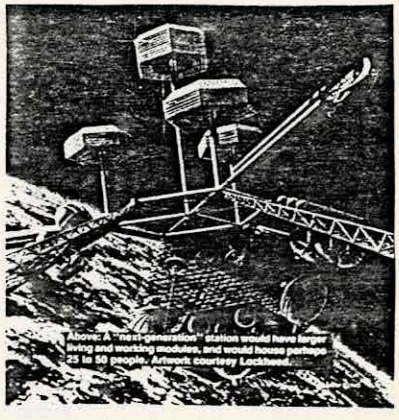
Grumman's concept housed a crew of three to four to begin with and took three Shuttle launches to put into orbit. Later trips added modules for expansion; all modules are attached to a central spine that provides power from the solar cells. Artwork courtesy Grumman.

GRUMMAN



Another idea involves building space platforms by snapping together graphite epoxy columns and beams. Artwork courtesy Lockheed.

Lockheed



Above: A "next-generation" station would have larger living and working modules, and would house perhaps 25 to 50 people. Artwork courtesy Lockheed.

January Calendar: Jan 18: Star party at Blaine's; 20: New moon-9:16 p.m. EST; 27: Planetarium trip to Gettysburg; 30: WAS meeting.

Westminster Astronomical Society

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