



Southeastern Space Supporter

Newsletter of HAL5 – the Huntsville Alabama L5 Society chapter of the National Space Society

Volume 5, Number 4 — July–August 1996

FIRST WORD

Success at the 1996 ISDC! NSS to Fund HALO Phase II-A

(by Gregory Allison, HAL5 President)

They all said it could not be done; that the National Space Society Board of Directors would never support a project like this; that it would be tabled to committee and die in subsequent study. No project like this had ever been supported out of the treasury of the NSS. Something inside told me otherwise; I had to make a major proposal to the NSS Board of Directors. Somehow I knew we would prevail!

Late afternoon on Sunday, May 26, at the 1996 International Space Development Conference (ISDC), I presented our plans for our High Altitude Lift-Off (HALO) Program to the NSS Board of Directors. The Board voted to pledge \$7,200 towards HALO Phase II-A, one of the largest allocations the Board has ever made. We have come back from the 1996 ISDC as big winners!

(see First Word on page 3)

HAL5 Program Night

Wednesday, July 24, 1996
7 to 9 p.m. (with social afterwards)
Huntsville Public Library Auditorium

“VentureStar: How Lockheed-Martin Plans to Build the X-33”

Guest speaker will be Mr. Dennis Smith of the NASA Marshall Space Flight Center X-33 Program Office.

All HAL5 and NSS members are encouraged to attend, and to bring interested friends and co-workers. Open to the public. Free admission.

NSS Launches Campaign to “Open the Space Frontier”

(including excerpts from June *Inside NSS*)

NSS’s “Campaign to Open the Space Frontier” was launched by NSS Executive Committee Chairman Robert Zubrin at the 1996 ISDC in New York City with presentations of the slide show that is the center of the campaign.

The “NSS Visions” Slide Show

The 26-slide show, conceptualized and designed by Zubrin, is intended for use by activists, chapters, and educators to conduct a series of public outreach events. The slides contain a visual chronology of space history and its hopeful future, from the Moon speech of President John F. Kennedy to the establishment of human colonies on the outer planets and among the asteroids.

More than 80 slide shows were sold at the ISDC and shortly thereafter. A checklist or text to accompany the slide show is being prepared by Director Bruce Mackenzie, Zubrin and others, and should be available by mid-July.

At the 1996 ISDC, Karen Mermel made a brief presentation on her plans to put the NSS slide show on CD-ROM for use on home computers. More on this subject later as this project develops.

Copies of Slide Show Available

Members can order the Slide Show from NSS HQ for \$25 a set; **\$15** each for bulk orders (over 10 sets). **HAL5 will be bulk ordering sets of slides once we have 11 requests (or close to it). Call Ronnie Lajoie at 461-3064 to request a set; I will compile them and send our combined request to HQ.**

(see Campaign on page 6)

HAL5’s Greg Allison Selected Outstanding Chapter Member

(by Ron Lajoie, Chapters’ Assembly Chair)

At the 1996 ISDC in New York, the members of the NSS Chapters’ Assembly (CA) voted unanimously to select HAL5 President Gregory Allison as the 1995 Chapters’ Assembly Outstanding Chapter Member. The following is the text of the CA Chair’s presentation:

“I would like to present the award for the Chapters’ Assembly Outstanding Chapter Member of 1995. This award goes to the NSS chapter member who has done the most for the NSS chapter system in 1995. This year, the award goes to Gregory H. Allison, president of the Huntsville Alabama L5 Society.

In addition to his role as president of a chapter which last year saw a record membership of 42, Greg also served as Program Manager of HAL5’s Project HALO and as Chairman of the Foundry. As Program Manager for Project HALO, Greg assembled and led a team of dedicated volunteers in the development of the first amateur-built, space-capable, hybrid rocket propulsion system. He also led a team in the development of a space education program called HALO Achievement, designed to take space education into the classroom in the same manner as Junior Achievement does for business education. As Chairman of the Foundry, Greg led the development of a permanent advisory committee to serve as a project incubation team for NSS chapters.

For his obvious dedication to the cause of the National Space Society and its chapter system, the NSS Chapters’ Assembly is proud to name Greg Allison the 1995 Chapters’ Assembly Outstanding Chapter Member!” ☆

Huntsville Alabama L5 Society

President — Gregory Allison
 Day: 971-1041, Eve: 859-5538
 Vice-President — Larry Scarborough
 Day: 881-1944, Eve: 881-4363
 Treasurer — Alfred Wright
 Day: 876-8037, Eve: 420-6273
 Secretary — Ronald Creel
 Day: 881-8016, Eve: 881-8016
 Membership — Philomena Grodzka
 Day: 837-4287, Eve: 536-8638
 Communications — Peter Ewing
 Day: 842-6087, Eve: 536-5571
 Special Projects — Ronnie Lajoie
 Day: 461-3064, Eve: 721-1083
 Programming — David Dean
 Day: 922-4897, Eve: 379-3661

Southeastern Space Supporter

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 July / August 1996

The Southeastern Space Supporter is a bi-monthly publication of the Huntsville Alabama L5 Society (HAL5), a not-for-profit 501(c)(3) organization devoted to the goal of seeing everyday people living in thriving communities beyond the Earth.

Any opinions expressed in this newsletter are those of the authors or of the Editor, and, unless expressly so stated, are not necessarily those of HAL5 or the NSS.

Visit the HAL5 Web Page on Internet via:
<http://iquest.com/~hal5/>

HAL5 encourages its members to speak out on space-related issues, and welcome submissions of both fact and opinion articles of interest to HAL5 members.

Submit letters or articles to: Ronnie Lajoie
 162 Kirby Lane, Madison, AL 35758
 Day phone/message: 205-461-3064
 Night/Weekend phone: 205-721-1083
 FAX number: 205-461-2551
 Electronic mail address: hal5@iquest.com

Deadline for submittal is the last day of the following months: February, April, June, August, October, and December.

Preferred format for text is ASCII on a diskette or sent by E-Mail. Preferred format for text with graphics is Word on a diskette. Also acceptable are letters and articles sent by mail or faxed; however, the more retyping required, the less likely the acceptance. HAL5 is not responsible for receipt of mailed submissions; none will be returned unless sent with a SASE. Hand-delivered diskettes will be hand-returned. No compensation is paid for submissions.

1996 HAL5 Election Results

(by Ronnie Lajoie, SSS Editor)

At the June HAL5 Program Night on Wednesday, June 24, the membership of HAL5 (11 were present) voted unanimously to elect the slate of officers as selected by the HAL5 Elections Committee. The Committee consisted of members Philomena Grodzka and Bill Axenroth. Ron Lajoie nominated the slate; Philomena seconded. Greg Allison requested nominations from the floor, but none were made. Alfred Wright motioned to close nominations; David Hewitt seconded. Bill Adams counted the votes. The following HAL5 officers and committee chairs were elected and will serve from July 1, 1996 to June 30, 1997:

President.....Gregory (Greg) Allison
 Vice-President.....Larry Scarborough
 Treasurer..... Alfred (Al) Wright
 SecretaryRonald (Ron) Creel
 Membership Philomena Grodzka
 CommunicationsPeter Ewing
 Special Projects Ronnie Lajoie
 Programming David Dean

The Programming position was added to better coordinate public lectures. All HAL5 members should feel free to contact any of your elected officials (see sidebar at left for their phone numbers), as they are here to service you. ☆

HAL5 Attends Professionals of the Year Awards Dinner

(by Ronnie Lajoie, SSS Editor)

On Tuesday, May 14, HAL5 members gathered to cheer those individuals selected by their respective societies to receive a HATS Professional of the Year Award. Among them were Tim Pickens, who was selected to receive the award for HAL5 (see the May/June issue), and member Lorraine Barnum, who was selected to receive the award for the Armed Forces Communications and Electronics Association (AFCEA). Greg Warren, who was selected for the Student Experimental Payload Program could not attend.

Among the large audience were HAL5 members Greg Allison, Ronnie Lajoie, Tim and Melanie Pickens, Ron Creel, Alfred Wright, Peter Ewing, Bill Brown (with Greg Dewitt), Lorraine and John Barnum, Bill Axenroth, and Philomena Grodzka, the Executive Coordinator for HATS, which sponsored the event.

The Dinner was held in the North Hall in the Von Braun Civic Center. Just prior to the dinner, a social hour was held whereby guests could freely roam around the exhibits for TABES 1996. HAL5 members used this opportunity to continue to show off the Project HALO Exhibit, which attracted a large share of the visitors during the 2-day event. ☆



Professionals of the Year Tim Pickens (HAL5) and Lorraine Barnum (AFCEA)

(First Word, continued from page 1)

The Board of Directors Meeting

It was toward the end of the day for the Board meeting. The board had come up with a plan to limit presentation time. In years past, if you were at the end of the agenda, you were dead! Ronnie Lajoie went before me presenting for the NSS Chapters Assembly. Ronnie went over his allotted time, and he apologized, obviously concerned that our presentation would be in trouble.

I told the Board of Directors that the best way to promote the popularization of space and space activism is to directly involve school children in hands-on space projects that can be quickly accomplished within the scope of a single school year. I made the case that there was no better way to build public support for space than to reach out to the school children. I stated that when they get excited about space, that it rubs off on the parents, especially if they see this motivation translated into greater academic performance. Well planned projects that can make this apparent on the community level will earn community wide support for space.

Greg Describes the HALO Program

I stated that we had developed a "little program" to bring space education into the fifth grade level based on the Junior Achievement model of using guest instructors in the class-room and I plopped our thick and heavy HALO Achievement book onto the table before me with a quite a clap!

I explained our program of tethered balloons and small rocket experiments for elementary school grades (along with our program to send Rascal the Rockoon Raccoon to Mars), free flight balloon missions to the edge of space (100,000 feet) and large ground based rocket flights for middle school students, and rockoon missions into space for high school students as the apex of the program.

I spoke of plans to expand the HALO Achievement Program to higher grade

levels and to use "Junior Cadet Foun-dries" to assist school kids in project planning. I raced through the presentation of these ideas to point out that we were developing a system that could fly high school student payloads "dirt cheap" into space. "Imagine that!" I exclaimed, "High school students flying experiments on ballistic trajectories into space — within the span of a single school year!"

I explained the phases of our program, HALO Phase 0 - the test phase, HALO Phase I - "Proof-of-Concept", our first launch of a rocket into space from a high altitude weather balloon. I explained this mission and how we hoped to accomplish it by this autumn. I mentioned that if no one else beat us, such as the Pacific Rocket Society, we might well become the first amateur group to reach space. (I noted with great interest the vocal grumblings of doubt that a number of the Board members expressed relative to the Pacific Rocket Society's ability to reach space in this time frame.)

Greg Lays out the Costs of Phase II-A

The Board of Directors looked captivated with interest. Then I made our request for the next phase of Project HALO. The Board was not prepared for what they were about to hear. In all years past, everything going to the Board was fully spelled out in the Agenda package before the meeting. Most major projects and initiatives are presented at the Executive Committee Meeting the previous December, and usually sent to a study sub-committee.

I requested that the NSS support HALO's Project HALO Phase II-A, which would ultimately be the second stage of a two stage HALO Phase II-B rocket. Phase II-A would be the ultimate operational amateur rockoon system. It would be based on a 350-lb thrust hybrid motor which would fire for 30 seconds. It would be launched from a 146,000 cu.ft. weather balloon at 100,000 feet and employ active guidance to take up to 40 pounds of payload to 40 to 60 miles, providing a

few minutes of microgravity time for experimenters.

I explained that HALO had \$4,000 worth of resources to apply toward this mission and that we needed \$7,200 from NSS. I offered NSS 60% of the payload capacity and offered that HALO was willing to coordinate it for them.

I explained that this Phase II-A system would latter serve as the upper stage of a rockoon system which would use a 1000-lb thrust first stage which would fire for 40 seconds. This system would require a 780,000 cu.ft. cylinder weather balloon and be capable of taking up to 100 pounds of payload from 80 to 200 miles high!

I pointed out that the HALO Phase II-A operational system was within the realm of amateur operations. However, HALO Phase II-B would require professional teams for balloon handling operations. While HALO Phase II-B could support amateur experiments, the launch operations would have to be conducted by professionals.

"Imagine the National Space Society reaching space for just \$7,200!" I proposed we fly our mission by November 22nd of 1997. The Board was dumb-founded.

The Board Considers the Request

Dr. Robert Zubrin, chairing the Board meeting in the absence of Dr. Buzz Aldrin (who was sick with the flu), grabbed the idea. Greatly concerned with the success of the 1996 ISDC, Bob Zubrin asked if we could advance our schedule to launch by the 1997 ISDC in Orlando, Florida. I considered some quick mental flip-flops with the realization that the active controls would be the main driver. I replied that I thought we could do this.

Pat Montoure, NSS Director from California, then threw up objections regarding NSS liability for launch operations. Bob Zubrin replied that the Earth was basically empty, as if there were essentially nothing to worry about. However insurance concerns prevailed.

There was some discussion about getting launch approval from the Orlando area during launch operations of NASA and Air Force programs. Some location lee-way was considered for our project.

The Board Makes a Proposal

The following proposal went before the Board: Moved by Bob Zubrin that the NSS provide \$7,200 for the HAL5 rocket program, provided HAL5 (a) can do it in conjunction with the Orlando conference (i.e., be technically ready), (b) get the required permissions, and (c) provide evidence of adequate liability insurance; and all subject to ongoing review by Robert Zubrin, Joe Redfield, and Ed Finch. It was also made clear that we would need to demonstrate that we have active guidance in hand.

We were down to the wire. The Board had permitted me to go well into overtime. Arguments were flaring. Board members were beginning to walk out. The Board was losing quorum. Alan Wasser, who had important prior commitments, was leaving the room and taking the Board quorum with him.

As the Board debated, he walked out of the room. I stood and requested a call to vote and someone chased Alan Wasser down. Alan Wasser returned to the room. The call to vote was issued. Before the vote was taken, David Anderman (who had left just as Ronnie was finishing) re-entered the room. (He had no idea what the Board was voting on and abstained). The motion passed. (Later, David Anderman told Ronnie that if he had been in the room, matters would have gone differently.)

We won the impossible by the skin of our teeth! \$7,200! That is: **SEVEN THOUSAND TWO HUNDRED DOLLARS!** Albeit with provisions; but I think we can manage them well.

The Preparation Behind the Scenes

The real story lies in the behind the scenes crunching Tim Pickens and I were doing with the support of Ron Creel, Gene Hornbuckle, and even Steve Mustaikis. Due to the cost of the

weather balloons and our estimates of just what the NSS might buy onto we had to totally rescope the HALO Phase II Program within the last two days before I flew to New York.

In fact, as I flew to New York, Tim was still working on costing the rocket and Gene Hornbuckle was still running altitude performance curves. I was going to have to take all of this and put it into the overall system cost on-site in New York. Basically I had no idea what I was going to present to the Board! I just knew I had to get it right and set in concrete before I presented. There could be no ambiguities!

I had arranged with Joe Redfield (NSS Treasurer) to borrow his lap-top computer for a while at the ISDC to integrate all the cost data into an Excel spreadsheet. I had to tie in the cost of the balloon, avionics and the gondola. Tim would fax me his data and Gene Hornbuckle's performance curves for this rescoped system.

That all sounded great and well until I lost the fax Tim sent me. Tim retransmitted the fax and I got to work. It was a real blessing to have the use of Joe Redfield's computer at the ISDC. It did have a slight problem which made using it quite time consuming: the lower sections of the display would not illuminate unless you held it with one hand at all times and applied pressure. I took me about four times longer to work this spreadsheet than it normally would have.

I had to pass up a wondrous dinner Friday night with Bill Axenroth and his charming wife Quin to work on the spreadsheet late into the night — still it was not done. Joe let me hold on to the computer Saturday for a good part of the day. As I was chairing the 1996 ISDC Foundry, I was also typing on this laptop with one hand and holding the screen with the other. Somehow I managed to just complete the spreadsheet before Joe came back for the computer.

SAY WHAT!?

Well a spreadsheet is not a Board presentation — far from it! Now that I had the numbers what was I going to say? I literally had to configure the Phase II-A based on the numbers I had in hand. But how would I sell it? I had been networking beforehand with Bob Zubrin, other Board members and NSS staff to read the pulse of the current Board to see what their objectives were. To succeed I knew I had to pitch how the HALO program would help NSS achieve their objectives.

The hot topics were outreach, space activism and building a broad based public enthusiasm for space development. Bob Zubrin promoted the idea to use a visionary slide show coupled with a petition drive and an multi-level marketing type membership recruiting campaign. My goal was to paint the picture for how we could address these objectives with the HALO Program; thus the preamble I would present to the NSS Board of Directors.

Down To The Wire

Even this part did not come together that easy. Originally I was supposed to present to the Board early during the meeting that Sunday. I was not yet truly prepared. I had to focus and build my presentation. Fortunately 1996 ISDC staff member Sam Liebowitz supported me and permitted me to use one of their computers to develop the presentation. I wrapped it up about 20 minutes before my presentation time. I literally spent the next 20 minutes in the Board meeting considering how I would launch this presentation. It all literally came together at the last minute — just like our final launch decision in Manchester, Tennessee.

The Ragged Edge of Greatness!

It is like I said in my last column with respect to the Manchester launch: "The basic message that comes across to me is that greatness lies at the ragged edge of the undoable. When it can't be done — you just have to push through it!"

When all appears to be lost, give it another shot and hang in, for you have just begun!

Kudos a Plenty!

I want to thank those who went with me to the 1996 ISDC in New York City. Your presence at the HAL5 HALO booth paved the road for me before the NSS Board of Directors. It is you that demonstrated what we in HAL5 are really capable of. These Thank-Yous go out to Bill Axenroth and his wife Quin, to Ron Creel, to Peter Ewing, and to Ronnie Lajoie. I must mention that Ron Creel saved us a bundle of money by guarding the exhibit area each night.

I also want to thank those whose hard work supported the proposal behind the scenes. Thank-Yous to Tim Pickens, Ron Creel, and Gene Hornbuckle.

Finally to all of you in HAL5 (especially those who come out for the Project HALO work parties): Thank you all very much for making this possible! Ad Astra per HALO! ☆

My Other ISDC Activities

(by Greg Allison)

I can't say a lot about the ISDC beyond the meetings and activities I supported. I got roped into the Chapter's Assembly twice. My arguments against massive reorganization of the NSS chapter system got me roped into the NSS Chapter Organization Committee and more meetings on that. I spent much of the day Friday at our exhibit and chasing important contacts for HALO. Saturday I ran the Foundry. Most of the rest of my time, except for a few meals, went into our proposal. Oh yeah, I did get to attend one presentation. Some dude named Greg Allison talking about launching hybrid rockets from a balloon. Gosh, it all sounded so familiar!

Wait! Was It Really New York?

Was it really New York that I went to? I really don't think so. After all, I

didn't see the Empire State Building, the Statue of Liberty, or even the World Trade Center. Actually I think we were flown to some MGM studio set. Just like the way they faked the Mars mission in the movie "Capricorn One". Yeah, it could've been any of a number of cities. A few signs and street extras and presto — Virtual New York!

Yeah, okay, you do need a few tall buildings sprinkled in and a lot of taxicabs. Come to think about it could have been New York. Maybe I was just too busy at the conference. Drat! I missed my once in a life-time chance to put graffiti on General Grant's Tomb! Dad-burn-it, that just hangs it all! ☆

My 1996 ISDC Experiences

(by Peter Ewing)

New York, New York. The town so nice they named it twice, and took half off the room price at the Grand Hyatt. Does it get any better?

Thursday, May 23 — Attended Ron Creel and others' panel on "Memories of Apollo." Audience members kept asking questions seventy five minutes after the session had officially ended!

Friday, May 24 — Manned the HAL5 booth. Our Project HALO display generated a lot of interest from conference participants, especially two Canadians I encountered who were constructing a rocket motor test stand of their own.

Saturday, May 25 — Visited the United Nations and the Empire State Building. The U.N. tour guide said that the painting on the walls of the General Assembly had no specific meaning, so I asked if it might not represent pancakes and french fries. The guide didn't answer my question, however, many of the other visitors laughed.

Sunday, May 26 — Manned the Project HALO booth again. We didn't sell too many T-shirts, but almost everyone liked our ten minute video, compiled by Tim Pickens. I flew back to Huntsville

that afternoon, encountering enough turbulence on the Atlanta approach to wonder if our HALO balloon would be able to survive similar conditions. Cross your fingers! ☆

My Trip Through Wonderland

(by Ronnie Lajoie)

I'm beginning to think like Greg (this has me worried). Was I really in New York City? The Big Apple? I too remember a lot of tall buildings and hundreds, perhaps thousands, of taxi cabs. But, unlike past trips in my youth, I spent little time being a tourist.

While I did not have a proposal to make, I had plenty of work to do as Chair of the NSS Chapters' Assembly. For those of you who really want to know, I suggest you read the Official Minutes of all the meetings I either chaired or attended during the 1996 ISDC. They can be found on the Chapters' Assembly Web site at: "<http://iquest.com/~hal5/assembly/>"

In between Chapters' Assembly duties, I put in as much time as I could spare at the HALO Exhibit, explaining the project, passing out information, and encouraging them to join HAL5, buy a HALO T-shirt, and/or register for our 1996 Southern Space Development Conference (SSDC). Because of an overall low turn-out for the 1996 ISDC, we sold only nine T-shirts and two SSDC registrations; however, we also signed up three new HAL5 members (see page 12). (Because of the shortage in SSDC registrations, and increasing concerns about the HALO-1 launch schedule, the HAL5 Executive Committee voted on July 18 to cancel the SSDC for this year.)

I did have some fun though, thanks to our very gracious host Greg Zsidisin and his wife, who led Peter Ewing, Ron Creel, and I on a brief tour of New York at night, include a horse-drawn carriage ride. And also thanks to Peter and his brother & wife, who guided a group of us through the subways to a little Italian restaurant in lower Manhattan. ☆

(Campaign, continued from page 1)

The idea is to present the slide show to a local audience, such as Rotary Clubs, Toastmasters, civic and business clubs, political organizations, educational audiences, private briefing to elected officials or media leaders, and others.

HAL5 President Greg Allison kicked off the Campaign locally by presenting the slide show to HAL5 members at the Program Night in June. Newly elected Vice-President Larry Scarborough followed up by presenting the slide show to the Lions Club at Brewer. Ronnie Lajoie plans to show it soon to members of the North Alabama Science Fiction Association.

“Open the Space Frontier” Petition

After the slide show is complete, the presenter should attempt to recruit volunteers who will then lead petition drives at their workplace, among friends, at social club meetings, at shopping malls or airshows, etc.

A blank copy of the “Open the Space Frontier” petition form is enclosed with this newsletter. MAKE SOME COPIES OF IT FIRST! Then please find people willing to sign them — and better still, people who would be willing to take a petition form and help you to find more signatures.

Mail in the completed forms yourself or hand them to a HAL5 officer; we can mail them to NSS HQ in bulk.

As Bob Zubrin has said [at the ISDC], the key metric of success of the petition drive is not how many signatures [each of us] get, “it’s how many people we can get to petition with us.” If people join us in the petition drive, we ought then to be able to recruit them into NSS. And then into your chapter and then into full-fledged activists.

The “Open the Space Frontier” petition will be available soon on the NSS Web site as an on-line form (with an option to browse the resulting list by date submitted). You can find the petition at this URL:

<http://www.nss.org/petition.html>

The NSS “Agenda for The Future”

The May/June special issue of *Ad Astra*, “An Agenda for The Future,” features articles written by leading thinkers in the field. Collectively, they present a vision of what a spacefaring civilization will mean for humanity’s future and what needs to be done now to create it.

As Zubrin has said, “It is a document that we can give to others and say:

The May/June special issue of *Ad Astra*, “An Agenda for The Future,” is a document that we can give to others and say: “Here, this is what we in the National Space Society stand for. This is the bright, hopeful future we are striving to create. If you agree, then join us.”

‘Here, this is what we stand for. This is the future we are striving to create. If you agree, then join us.’”

A blank copy of an NSS membership form is enclosed with this newsletter. MAKE SOME COPIES OF IT FIRST! Then please find people willing to join (including yourself, if you are not yet an NSS member).

You will receive \$5 for each person you sign up (including for yourself). Hand all completed forms and payments (cash and checks only) to a HAL5 officer, preferably Treasurer Alfred Wright. He will fill out the necessary paperwork and submit the forms to NSS Headquarters.

Copies of Special *Ad Astra* Available

Chapters can order extra copies of the issue for \$1 each (shipping and printing). Bulk orders (over 10 copies) will cost 50 cents each. **HAL5 will be purchasing a block of 30 or more copies, to be made available to current and prospective members free of charge. Call Ronnie Lajoie at 461-3064 to reserve an issue.**

The NSS “Yak Attack”

The “Yak Attack” is a concerted effort to put the topic of space on the agenda of every relevant talk radio show in the country. NSS HQ plans to sponsor at table the upcoming annual convention of the National Association of Radio Talk Show Hosts in Washington. The campaign also calls for activists to pick up the ball and start yakking!

So, tune into AM radio, or the local NPR stations (i.e., WLRH) in your community. Call the producers or hosts and suggest a show on space. Call the show and just strike up a conversation about space. Take whichever opportunities arise — a shuttle launch or DC-XA test flight, an announcement of a major aerospace contract, a Hubble Space Telescope discovery, whatever —and use quotes from the May/June special issue of *Ad Astra* to bolster your argument.

And then, to help us better track our success, send us an after-action report on what you talked about, how was it received, how many other callers picked up on the issue, etc. Yak away!

Call to All HAL5 Members

At 56 members, HAL5 has become one of (if not the) strongest chapters in the NSS. We owe it to our fellow chapters to show leadership in this campaign. I urge all of you to participate, and to join NSS if you haven’t yet. Ad Astra! ☆

HAL5 CALENDAR OF EVENTS (Post Me!)**July 1996**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
14	15	16 HALO Technical Comm. Meeting Noon at Ponds	17	18 HAL5 Executive Comm. Meeting Noon at Ponds	19	20 Apollo Moon landing 27th anniversary
21	22	23 HALO Technical Comm. Meeting Noon at Ponds	24 HAL5 Program Night 7 pm at Library	25 HAL5 Executive Comm. Meeting Noon at Ponds	26	27
28	29	30 HALO Technical Comm. Meeting Noon at Ponds	31	HAL5 Program Night at the Huntsville Public Library "VentureStar: How Lockheed-Martin Plans to Build the X-33" with guest speaker Dennis Smith, NASA Wednesday, July 24, 7 to 9 p.m. (business at 6:30pm)		

August 1996

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Project HALO Main Event — Balloon Test Day #4 Launch of 19,000 cu.ft. helium balloon to 100,000 feet Experiments include rocket electronics and oxidizer tank heater system 9 a.m. – 2 p.m., Saturday, August 10 from TBD around Toney, AL				1 HAL5 Executive Comm. Meeting Noon at Ponds	2	3
4	5	6 HALO Technical Comm. Meeting Noon at Ponds	7	8 HAL5 Executive Comm. Meeting Noon at Ponds	9	10 HALO Balloon Test Day #4 9a at TBD
11	12	13 HALO Technical Comm. Meeting Noon at Ponds	14	15 HAL5 Executive Comm. Meeting Noon at Ponds	16	17
18	19	20 HALO Technical Comm. Meeting Noon at Ponds	21	22 HAL5 Executive Comm. Meeting Noon at Ponds	23	24
25	26	27 HALO Technical Comm. Meeting Noon at Ponds	28 HAL5 Program Night 7 pm at Library	29 HAL5 Executive Comm. Meeting Noon at Ponds	30	31

September 1996

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 HALO Technical Comm. Meeting Noon at Ponds	4	5 HAL5 Executive Comm. Meeting Noon at Ponds	6	7 Star Trek 30th Anniversary VBCC & S&RC
8 Star Trek 30th Anniversary VBCC & S&RC	9	10 HALO Technical Comm. Meeting Noon at Ponds	11	12 HAL5 Executive Comm. Meeting Noon at Ponds	13 Inputs to HAL5 newsletter due	14
15	16	17 HALO Technical Comm. Meeting Noon at Ponds	18	19 HAL5 Executive Comm. Meeting Noon at Ponds	20	21

NEWS FROM NSS HQ

Lori Garver to Work for NASA

(from the July issue of *Inside NSS*)

Lori Garver, Executive Director of the National Space Society since 1988, will take a one-year leave-of-absence to join NASA as a special assistant for communications in the Office of the Administrator [i.e., Dan Goldin] at the agency's headquarters in Washington.

In her new assignment, effective July 8, Garver will help strengthen NASA's dialogue with various external groups, including the aerospace industry, other government entities, the general public, and the media. Her duties will include communications about the significant changes being led by NASA Administrator Daniel S. Goldin, who has spearheaded a reinvention of the agency over the last four years.

NSS Chairman of the Board Buzz Aldrin said, "While the Society will miss Lori and her ability to direct our activities over the next year, we recognize that her communications skills and experience dealing with many of NASA's constituencies will help the agency tell its story during an exciting era of change. Her substantial responsibilities at the National Space Society make her extremely well suited to take on this challenge."

Charlie Walker, NSS President, said, "Lori Garver has proven her skills in working across a spectrum of industry, advocacy and public constituencies. Although her new assignment will be challenging, having worked closely with Lori over the past eight years, I know she is well prepared to meet the challenge."

In a farewell message to the Board, Garver wrote, "Having served as executive director for the past 8 years, it is with some reluctance that I leave this truly exciting job. Would it not be for the unique opportunity being offered to me by NASA, I would gladly continue my service. I look forward to our continued relationship in my new

capacity over the next year, and to our mutual efforts in support of humankind's future in space."

NSS Executive Vice President Scott Pace messaged other Directors, "I think this is a great opportunity for Lori (and NASA) and wish her all the best in her new effort. I am confident David [Brandt] will provide necessary continuity with his usual diplomacy. We will all continue to work together — just in new positions."

A Profile of Lori Garver

Garver has spent the past 12 years with the National Space Society, a grassroots space advocacy organization with over 27,000 members and 80 chapters worldwide. She is frequently asked to testify on Capitol Hill, is widely quoted in the media on issues of space policy and has delivered numerous papers at national and international conferences.

Lori Garver has served as President of Women in Aerospace, Chair of the Education Committee of the International Astronautical Federation, and is a member of the Board of Advisors of a number of organizations including Students for the Exploration and Development of Space, the District of Columbia Space Grant College and Fellowship Consortium, the X-Prize Foundation and the STA-NASA Space Act Space Tourism Study.

She currently serves as an appointed member of the NASA Advisory Council and the Commercial Space Transportation Advisory Committee. She will resign these positions during her leave of absence.

Garver holds a B.A. in Political Economy from Colorado College and a M.A. in Science, Technology and Public Policy from George Washington University.

David Brandt Named Exec. Director

David Brandt, NSS's Program Director since 1988, has been named the Acting Executive Director during the leave of absence of the current Executive Direc-

tor, Lori Garver. The appointment was made by Executive Committee Chair Robert Zubrin.

As Program Director, Brandt has been responsible for management and fulfillment of all activities involving the Society's media relations, including press releases and media inquiries, interview requests (for staff, elected officers and local chapters) and maintenance of press contact lists, recordings and clip files.

He has also served as a Society spokesperson, giving frequent media interviews and public appearances on current space activities, Society activities and public sentiment for space. He has also provided background material for numerous print and electronic publications and broadcast news programs. He has appeared on international, national and local television broadcast, cable and radio shows, and frequently writes for the Society's membership publications including *Ad Astra* magazine, *Inside NSS*, and *Space Notes*.

Brandt has managed and was an announcer for NSS' Dial-A-Shuttle program (a 900 number information service) and wrote and announced the NSS Hotline for 5+ years. He has also been called upon to serve as a host/guide for VIP's, including government officials, media personalities, and aerospace industry leaders.

He has been responsible for all Society products on the Internet, including NSS's Space Exploration Online forum on America Online, the NSS World Wide Web homepage on the Internet, and more than a dozen listservs and message boards.

In addition, he has served as liaison with the Society's Chapters, Education, Science and Technical, Policy, Conference and International Committees. He has been the responsible staff contact for the Society's many grassroots activities, including the chapters, internal conferences and external conference participation.

A Profile of David Brandt

Prior to his work at NSS, Brandt worked for Spacecause, District of Columbia Schools, Federal Express Corporation, Federal Election Commission, John Glenn Presidential Committee, Inc., and the Democratic National Committee.

Brandt completed the University of Maryland's Masters Certification Program (Social Studies and Speech Communication) in 1986, and received his B.A. degree in Fine and Professional Arts (Communications) from the Kent State University in 1982. He has been a member of the International Astronautical Federation's Education Committee since 1993 and belongs to The Planetary Society (1992) and The National Space Society (1985).

Brandt said he plans to continue current programs and will focus on membership services and development, with a special emphasis on continuing the Society's strong Washington presence. "I will work to see improvement in our staff's communications with members and chapters, and I look forward to working with the Board and our activist membership to strengthen our Society's association management", Brandt said in an interview.

"None of this, of course, should presume I am being critical of the previous director, as I have enjoyed the opportunity to work with Ms. Garver for the past eight years and wish her the best in her new endeavor," said Brandt. (Lori Garver and David Brandt celebrated their 10th wedding anniversary on Space Day, July 20.) ☆

Life Without Lori

(by Jeffrey Liss, Editor of *Inside NSS*)

Even in the space movement, having one of your leading players co-opted by another team can be a double-edged sword.

The good news is that Lori Garver is getting a great opportunity, both for

herself and for promoting the human settlement of space.

The good news is that it is gratifying for us to have the exceptional abilities of our Executive Director so publicly recognized.

The bad news is that her departure leaves a huge void at NSS HQ. We watched Lori blossom from a campaign staffer for Sen. John Glenn to assistant to our first post-merger Executive Director Glen Wilson, to a highly effective E.D. and ultimately to a real force in the space movement -- one whose phone calls always got returned. We do not relish the prospect of starting the learning curve all over.

The good news is that we will have someone who shares NSS's vision in a high place, where her voice may be more easily heard.

The bad news is that Dan Goldin will be her boss, not Bob Zubrin, and we may end up hearing Lori advocate an agenda not quite the same as NSS's.

The bad news, therefore, is that Lori's talents and forcefulness will now be available to the other team, sometimes working against us.

The good news is that, with David Brandt moving up from Program Director to Acting Executive Director, we will at least have some continuity at HQ to shelter us from the abrupt change.

The bad news is that Lori made it easy for all of us, responding quickly and clearly to all sorts of developments that might otherwise have had to work their tortuous paths through layers of NSS's elected leadership. Which means that all the NSS officers, directors and -- yes -- we grass roots activists are all going to have to step up and each take a little more initiative, assume a little more responsibility, and work a little better together, to fill the gap left by Lori.

The good news is that our all stepping up a notch, and cooperating more, can only strengthen our organization. ☆

SPACE FICTION

A Walk in the Garden

(by Larry Scarborough)

The hull of the landing craft took hours to cool, so fiercely had the atmosphere resisted its descent. Aerobraking had always seemed brutal to Howard, but was, of course, the most efficient means of deceleration when landing on planets having air.

And this planet had air. Not just ammonia and methane and carbon dioxide like so many of the planets they had charted. The oxygen-nitrogen envelope implied photosynthesis somewhere on the planet. By the time the ship's skin had recovered from the landing, so had Howard's head. He joined Fine and Curley at the hatch.

And, yes, photosynthesis had produced the oxygen. The huge green leaves with their peculiar pie-shaped fruit parted easily as the trio set out. The rich aroma reached Howard's nose. What did it remind him of? Cheese? Ham? Anything that smelled that good had to be compatible with human biochemistry. No lengthy terraforming needed here. None of those tasteless, colorless, hydroponic tomatoes. Earth's bulging population finally had a new world to spill over into.

"Did you ever think we'd find a planet so ready for human habitation?" Howard voiced his thoughts, not noticing the muffled gasp behind him. "There's even ready-to-eat quiche just for the picking," he continued, pointing out the discoid fruit.

"Not exactly," Curley corrected as he hacked cautiously away from the huge, leaf-shrouded disk from which Fine's struggling feet now barely protruded. "The way I see it, real quiche don't eat men!" ☆

Project HALO News

HALO Balloon Gondola

Update: A New Spin on Things

(by Larry Scarborough, Gondola Team lead)

The ground test of the gondola (rocket launch tube) on April 13 was generally considered a success. But the loss of the rocket's fins in the early part of the flight got some of our team members to cogitating. Even after shucking its fins, the rocket continued on a vertical trajectory. This was before bailing out, the fins had imparted a football-like spin to the rocket.

Could we, someone (named Tim Pickens) wondered aloud, spin up our gondola before ignition and have a stable flight without the weight and drag of fins? And from that suggestion has spewed a plethora of bright ideas.

Wound-up bungee cords, cold jets of compressed gas, and electric motors were all considered as means of spinning up the launch tube. The simplest idea (in that it had no moving parts) was to drop a gondola mounted with fixed propeller blades that would spin like a maple seed. This idea was so "simple" that it took Ronnie Lajoie about three pages of aerodynamic equations to describe it mathematically. Because of the inherent uncertainties, especially in the timing sequence, this elegant idea had to be dropped.

The idea now being prototyped is a launch tube spun up by lowering the whole gondola a short way down its balloon tether which would be wound around the launch tube. This idea has the advantage of few moving parts, high school level (rather than Ph.D. level) physics, and easy ground testing to ensure reliability. A variation on the same theme would be to drop a heavy weight from the gondola.

Stay tuned for further developments, and call me at 881-4363 (evenings) if you would like to help out with the gondola development and testing. Ad Astra per Vertigo! ☆

HAL5 Site Moves to IQuest

(by Ronnie Lajoie, Web Page Manager)

In late May, HAL5 received word from HAL5 member Robert Ehresman that he would be shutting down his Internet service company, Community Internet Connect, Inc. (CICI), on June 30. In exchange for a Contributing HAL5 membership, Bob has provided us with free access to Internet for over a year, a value in excess of \$300 dollars.

All of us at HAL5 are extremely appreciative of his generous donation, which has allowed us to produce one of the best Web sites of all NSS chapters. All of us at HAL5 wish Bob the best of luck in his future endeavors.

The HAL5 Web site is now being hosted by IQuest, and I will be paying the \$20 monthly dues myself. As other HAL5 members are currently paying for their own Internet accounts, I will not request that HAL5 reimburse me nor consider my \$20 payments a donation.

However, the monthly rate increases once the total hosted file size exceeds 10 MB of disk storage; therefore, I will ask HAL5 members to assist in hosting parts of the Web site in order that we stay below the 10 MB basic-rate limit. Bill Brown has already offered to host scanned images (which consume disk space) of color photographs of Project HALO activities on his own Web site.

The new E-Mail address for HAL5 is:

hal5@iquest.com

The HAL5 Web site home page is at:

<http://iquest.com/~hal5/>

In general, the URL addresses for the individual HAL5 Web pages are the same except for the following changes:

1. "www.cici" is now just "iquest"
2. The ".html" suffix is now ".shtml"

If you have any questions, or wish to offer some personal Web site disk space for HAL5 files (as allowed), please call me at 461-3064 (day) or 721-1083. ☆

HAL5 Membership History Reconstruction Complete

(by Ronnie Lajoie, Outgoing Treasurer)

They say that "Curiosity kills the cat." Well, the fact that I am still alive is either because I am not a cat or because I haven't used up my nine lives yet. A combination of personality traits labels me as a scientist, private investigator, and neatness freak. I love to organize!

Soon after being elected to the HAL5 Treasurer position, I became interested in sorting through a large plastic box which my predecessor Bill Axenroth recovered for me. The box contained the 10-year financial history of HAL5.

Bill had done an excellent job of keeping the finances straight for the 1993 ISDC. I followed his model for the HAL5 and Project HALO accounts, and improved on his methods where I could. But that plastic box kept calling out: "Organize Me! Organize Me!"

Reconstruction Was Never Like This!

I guess being in the South made it easy for me to consider "reconstructing" the entire financial history of HAL5. So one night I open the plastic box, took out the yellowing envelopes containing past bank statements, old receipts, and cashed checks, and began the long arduous trek towards enlightenment.

The products of that multi-year effort were one reconstructed bank register, one stuffed-to-the-max 3-ring binder labeled "HAL5 Financial History", and a (hopefully) complete list of every person who ever joined HAL5 — which appears on the following page.

It is my intention to produce a HAL5 membership card for each of these members (whether past or current), and to fly them aboard the HALO-1 rocket (as weight allows, "past" may have to stay on the gondola) on its historical maiden space flight. **So check the spelling of your name!** And if you know the whereabouts of some of the earlier members, please let me know ASAP at 461-3064. Ad Astra! ☆

The Founding Fathers of HAL5

M-001	Gregory H.	Allison
M-002	G. Allen	Storey
M-003	Ernest V.	Gilmer, Jr.
M-004	David V.	Smitherman, Jr.

The First Year (1984) Members Club

M-005	Truman	McClard
M-006	Alex J.	Dessler
M-007	James	Anderman
M-008	Jim	Hudson
M-009	Carl R.	Konkel
M-010	Randall	Von Nostrand
M-011	Mary R.	Hester
M-012	Konrad & Jackie	Dannenberg
M-013	James T.	Bolen
M-014	David J.	Schultz
M-015	Sherry T.	Walker
M-016	Lawrence G.	Walker, Jr.
M-017	Dr. Jan A.	Bijvoet
M-018	Michael	Faulkner

The 1985 New Members

M-019	Lee	Reinleitner
M-020	John A.	Rusi
M-021	Gordon R.	Woodcock
M-022	Katherine W.	Cochrane
M-023	Benjamin	Harman
M-024	Ralph E.	Geiger, Jr.

The 1986 New Members

M-025	Richard B.	Payne
M-026	Philip	Fraering
M-026	Kenneth	Hagar
M-027	Jude H.	Johnston
M-028	Karl R.	Sackett
M-029	Charles P.	Grazioli
M-030	Dr. Daniel P.	Hale

The 1987 New Members

M-031	Richard W.	Riehm
M-032	Phil J.	Knowles
M-033	Terri	Sims
M-034	Raymond R.	Yoel
M-035	Dr. Edwin D.	Marsh
M-036	Betty	Marsh
M-037	Dr. John D.	Pearson
M-038	Steve	Arnold

The 1988 New Members

M-039	Michael R.	Fiske
M-040	Dennis R.	Wingo
M-041	Kenneth E.	Farnell
M-042	Peter D.	Jacobs
M-043	Shelley	LeRoy
M-044	Candance A.	Albright
M-045	James A.	Downey, III
M-046	Terry Brian	Gray
M-047	James B.	Keller
M-048	Alan C.	Lawhon
M-049	William M.	Womack

M-050	Kenneth D.	Gifford
M-051	Daniel L.	Delong
M-052	Cathy	Nichelson

The 1989 New Members

M-053	Thomas	Moore
M-054	Steve	Marsh
M-055	William H.	Axenroth
M-056	C. Les & Carol	Johnson

The 1990 New Members

M-057	Philip H.	Kitchens
M-058	Mark A.	Antonison

The 1991 New Members

M-059	Laurie	Wiggins
M-060	Melodie	Wade
M-061	Philomena G.	Grodzka
M-062	Ray	Robinson

The 1992 New Members

M-063	Teddy L.	Hollis
M-064	Thomas S.	Dollman
M-065	Joseph D.	Fann
M-066	Dr. Larry K.	Scarborough
M-067	Dr. Donald E.	Tartar
M-068	C. R.	Johnson
M-069	Stephen E.	Hollich

The 1993 New Members

M-070	Ronnie M.	Lajoie
M-071	Edward F.	Stluka
M-072	Joseph P.	Scott
M-073	Dr. Ernst	Stuhlinger
M-074	Les	Fetter
M-075	Craig	Presson
M-076	Nelda	Kennedy
M-077	Melanie	Hazelrig
M-078	Bill	Carswell
M-079	Thomas F.	Craig
M-080	Terry	Sanders
M-081	Dr. Ray	Moses

The 1994 New Members

M-082	Robert W.	Kamm
M-083	Robert E.	Becker
M-084	Randall G.	McCollum
M-085	George L.	von Pragenau
M-086	William T.	Adams
M-087	James P.	Lindberg
M-088	John & Lorraine	Barnum
M-089	Jerry W.	Moncus
M-090	Ethan A.	Scarl, Ph.D.
M-091	Richard G.	Rich
M-092	Arthur J.	Henderson, Jr.
M-093	Mary	Bare
M-094	Jones S.	Hamilton, Jr.
M-095	Eric	Freeman
M-096	Robin E.	Moore
M-097	Bill	Brown
M-098	Montie A.	Roehm
M-099	Natalia	Noginova

M-100	Melanie	McGhee
M-101	Jerry D.	Tomes
M-102	Donald	Zwach
M-103	David K.	Cornutt
M-104	Ronald A.	Creel
M-105	Larry D.	Larsen
M-106	Michael A.	Nazarek
M-107	Offa S.	McCollum
M-108	Timothy L.	Pickens

The 1995 New Members

M-109	Karen Renee	McDaniel
M-110	Alfred	Wright
M-111	Dr. David L.	Dean
M-112	Paul J.	Schwindt
M-113	Dr. Charles T.	Paludan
M-114	Robert L.	Ehresman, Jr.
M-115	Dennis J.	Lajoie
M-116	Steve	Mustaikis
M-117	Edward G.	Kenny
M-118	Peter D.	Ewing
M-119	Herman & Chris	Pickens
M-120	Bentley	Frink
M-121	Greg	Warren
M-122	J. Rick	Kauffman
M-123	Boise	Pearson
M-124	William	Hornbuckle
M-125	Gary	Marsh
M-126	Will	Bet-Sayad
M-127	Peder L.	Kilness

The 1996 New Members

M-128	Chuck	Schlemm
M-129	Nancy A.	Lajoie
M-130	Dennis	LaMothe
M-131	James A.	Prentice, III
M-132	Douglas A.	Childs
M-133	Julian V.	Campbell
M-134	Clayton	Sawyer, Jr.
M-135	Henry E.	Ahler
M-136	Alexander	Khalyarkin
M-137	Fritz & Tina	Staff
M-138	Martha H.	Feld
M-139	Matt	Beland
M-140	David	Hewitt
M-141	Gary	Buck
M-142	Phillip	May
M-143	Bryan	Jones
M-144	John A.	Pavlick
M-145	Eugene A.	Peresich, III
M-146	Franz	Gisin
M-147	David	Yeoman
M-148	Keith	Murdock
M-149	Lee Anne	Jernigan
M-150	Gary	Dion
M-151	David	Robinson

**Record HAL5 Membership
Continues into July!**

(by Ronnie Lajoie, Outgoing Treasurer)

1996 is turning out to be a fantastic year for HAL5 in terms of membership. While at the 1996 ISDC, we surpassed the magical membership count of 50. As of July 20, we now stand at 56, plus 3 newsletter subscriptions. We have also set a record in bringing back former members, as 32 (over 75% of last years total) of the 56 are renewals.

The following is a list of additions to the current paid membership of HAL5, which includes 32 renewals and 24 new members, for a total of 56. Also shown is a new subscriber to our newsletter. Welcome to all our new and renewed members and subscribers!

Steve	Arnold	(R)
Gary	Dion	(N)
Franz	Gisin	(N)
Lee Anne	Jernigan	(N)
Keith	Murdock	(N)
Steve	Mustaikis	(R)
Dr. Charles	Paludan	(R)
Eugene	Peresich, III	(N)
David	Robinson	(N)
Ethan	Scarl, Ph.D.	(R)
Dr. Ernst	Stuhlinger	(R)
David	Yeoman	(N)
Chris	Grossaint	(S)

(N) - New Member
(R) - Renewed Member
(S) - Newsletter Subscriber

HAL5 welcomes back its previous members Charles (Ted) Paludan, Steve Mustaikis, who recently took a job with Lockheed in Sunnyvale, CA (where the

X-33 will be built); and Ethan Scarl, our former Vice-President; and also past members Steve Arnold, who first joined in 1987; and Ernst Stuhlinger, a past member of Von Braun's rocket team, and recipient of the first NSS Wernher von Braun Award, presented at the 1993 ISDC.

HAL5 also welcomes its new members. Franz Gisin (from Idaho), Keith Murdock (NY), and David Yeoman (NY) encountered Project HALO for the first time during the 1996 ISDC in New York City. Lee Anne Jernigan hails from Arab, Alabama; and David Robinson from Fultondale, near Birmingham. Gary Dion is a student at Mississippi State University working the summer at NASA Marshall.

Gary has the honor of being the 150th person to join HAL5, based upon a recently completed reconstruction of the HAL5 membership history (see page 10). David Robinson is member 151.

All members are encouraged to attend, and participate in HAL5 and NSS activities and events (where feasible). Even remote members can help with Project HALO and the "Open the Space Frontier" campaign. A little help from a lot of individuals can greatly reduce the time when we can all afford to travel in space. With our membership now over 50, many other NSS chapters will be watching for our leadership in the coming months and years.

It has been my pleasure to serve as your Treasurer these past two years. I wish Alfred Wright the best in his new position. Ad Astra per Ardua! ☆

**Project HALO
T-Shirts Still for Sale**

The short-sleeve T-shirts are white with dark red ink showing the "HALO" logo and the words "Race for Space" over a starry background. T-shirts are a 50-50 cotton blend and come in Men's sizes ranging from Small to XXL.

T-shirt prices are \$10 for HAL5 members and their family, and \$12 for non-members.

For more information, call Ronnie Lajoie at 461-3064 or 721-1083.

Send Your Name to Saturn!

(from article in May/June *Final Frontier*)

Here is your chance to participate in the NASA space program. The Jet Propulsion Laboratory is gathering signatures to send on the *Cassini* spacecraft to the planet Saturn. The Planetary Society is already signing up volunteers to scan an anticipated one million signatures for loading onto a CD-ROM.

To participate, send in your signature on a plain postcard. More than one signature per postcard is allowed, so the whole family can sign up for the cost of one postcard stamp.

Mail the postcard to: Suzanne Barber, M/S 264-441, NASA Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109. The deadline is January 1, 1997.

Special Announcement

Program on Wednesday, July 24

"VentureStar: How Lockheed-Martin Plans to Build the X-33"

7 p.m. at Huntsville Public Library

Huntsville Alabama L5 Society

1019-A Old Monrovia Rd, Suite 168
Huntsville, AL 35806

ADDRESS CORRECTION REQUESTED

Place
First Class
Stamp
Here