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OA/ID Number: 13678
Folder ID Number: 13678-006

Folder Title:
Astronauts Barbecue Picnic 7/20/89 [OA 6266]

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THE WHITE HOUSE
WASHINGTON

July 19, 1989

INFORMATION

MEMORANDUM FOR THE PRESIDENT

THROUGH: CHRISS WINSTON *CW*
FROM: EDWARD E. McNALLY *EMN*
SUBJECT: REMARKS AT THE ASTRONAUTS PICNIC

I. SUMMARY

Attached for your consideration and review are draft remarks for tomorrow afternoon's remarks at the White House picnic honoring America's astronauts -- and the 20th anniversary of the Apollo 11 Moon landing.

II. DISCUSSION

Near the end of the picnic -- at approximately 12:45 p.m. on Thursday, July 20, 1989 -- you are scheduled to go up on the stage on the South Lawn. The approximately 700 guests at the picnic include nearly all of America's living astronauts (and their spouses), as well as Congressional and NASA dignitaries.

Your brief welcome and remarks (which are scheduled to last about five minutes) conclude with the words -- "God Bless the U.S.A." -- immediately after which, Lee Greenwood will walk out and sing the song by that same name.

[Note: As you suggested, we contacted Ray Siller, who submitted nine pages of jokes and comments. These are also attached for your information and consideration.]

(McNally/Simon)
July 19, 1989, 3:30 p.m.
Draft 4 (BBQ)

PRESIDENTIAL REMARKS: ASTRONAUTS BARBECUE PICNIC
WHITE HOUSE SOUTH LAWN
THURSDAY, JULY 20, 1989, 12:45 P.M.

Thank you, and welcome -- welcome all of you -- America's astronauts and spouses, our friends in Congress, NASA officials, and other honored guests. Welcome back to the White House.

Barbara and I appreciate you joining us for this important anniversary. Planning the picnic was a little hectic. We weren't sure whether you preferred your hamburgers grilled or squeezed out of a tube.

And thanks also for joining us earlier today for the Apollo commemoration at the Air and Space Museum. From the sound of things there, it did seem like one or two of you might be interested in going back to the Moon.

Although for some, maybe that's just because we're a little older. I hear Alan Shepard wants to go back just so he can remember what it's like to hit a golf ball more than 200 yards.

Alan was the first man to swing a golf club on the moon. Talk about a sand trap.

And Alan -- if you do go back -- I'd watch out for the new chairman of the National Space Council. The Vice President hits a mean 3-iron.

Like the Vice President, all of you here have had important roles in supporting the U.S. space program. And that support comes from many corners. Many of you have seen these wonderful

Ad Council spots that highlight how space technology benefits all humanity. And I'd like to take a moment to recognize someone here who has contributed her time and talent to this campaign -- "America's leading lady" -- Helen Hayes.

As you might expect from a former Navy pilot who lived much of his adult life in Houston -- I, too, am a long-time supporter of the space program -- and the fine work of the men and women gathered here. In our Administration's first budget proposal -- the largest single percentage increase is for the space agency.

Thanks to you and your colleagues at NASA, 20 years after Apollo 11, we still live in a world that is alive with wonder. Two weeks ago, Voyager Two discovered a new moon around Neptune. We are still getting acquainted with neighborhoods we didn't even know about.

On the way back from our own Moon, Buzz Aldrin spoke of the never-ending wonder of space. "This has been far more than three men on a voyage to the moon," he said. "This stands as a symbol of the insatiable curiosity of all mankind to explore the unknown."

And, I might add, that voyage -- like the efforts that came before, and the efforts that have come since -- is also a symbol of all the men and women of unique talent and character who made it possible -- a tribute to the commitment, ingenuity, and nerve of tens of thousands of people working all across the Nation.

No one knows better than those assembled here, that Apollo's missions to the Moon raised more questions than they answered.

My commitment today to forge ahead with a sustained manned exploration program -- [decade by decade] -- mission by mission -- **the space station, the Moon, Mars and beyond** -- is a commitment to continue to ask new questions, to seek new answers. Both in the heavens -- **and on Earth.**

James Michener was right when he told Congress: "There are moments in history when challenges occur of such a compelling nature that to miss them is to miss the whole meaning of an epoch. Space is such a challenge."

Well, today's announcement is our recognition that the challenge was not merely one that belonged to the 1960's -- it is one that will occupy Americans for generations to come. And the American people have led the way on this -- **the American people want us back in space -- and this time -- back in space to stay.**

Somewhere out there -- maybe on the Mall today, maybe listening on a radio somewhere out there -- the Americans who will first walk on Mars are now only children -- perhaps your children. And along with our congratulations to all of you -- we leave you today with the hope of that day, when another President stands with those pioneers, and echoes the last words spoken to the departing Apollo 11: "Good luck, and Godspeed."

Thanks for your contributions to the greatness of this country. God bless you. And "God bless the U.S.A."

#

BOB

PRESIDENTIAL REMARKS: ASTRONAUTS BARBECUE PICNIC
WHITE HOUSE SOUTH LAWN
THURSDAY, JULY 20, 1989
12:45 P.M.

THANK YOU, AND WELCOME -- WELCOME ALL OF YOU --
AMERICA'S ASTRONAUTS AND SPOUSES, OUR FRIENDS IN
CONGRESS, NASA OFFICIALS, AND OTHER HONORED GUESTS.
WELCOME BACK TO THE WHITE HOUSE.



- 2 -

BARBARA AND I APPRECIATE YOU JOINING US FOR THIS
IMPORTANT ANNIVERSARY. PLANNING THE PICNIC WAS A
LITTLE HECTIC. WE WEREN'T SURE WHETHER YOU PREFERRED
YOUR HAMBURGERS GRILLED OR SQUEEZED OUT OF A TUBE.

AND THANKS ALSO FOR JOINING US EARLIER TODAY FOR
THE APOLLO COMMEMORATION AT THE AIR AND SPACE MUSEUM.
FROM THE SOUND OF THINGS THERE, IT DID SEEM LIKE ONE OR
TWO OF YOU MIGHT BE INTERESTED IN GOING BACK TO THE
MOON.



ALTHOUGH FOR SOME, MAYBE THAT'S JUST BECAUSE WE'RE A LITTLE OLDER. I HEAR ALAN SHEPARD WANTS TO GO BACK JUST SO HE CAN REMEMBER WHAT IT'S LIKE TO HIT A GOLF BALL MORE THAN 200 YARDS.

ALAN WAS THE FIRST MAN TO SWING A GOLF CLUB ON THE MOON. TALK ABOUT A SAND TRAP.

ALAN -- IF YOU DO GO BACK -- I'D WATCH OUT FOR THE NEW CHAIRMAN OF THE NATIONAL SPACE COUNCIL. THE VICE PRESIDENT HITS A MEAN 3-IRON.



[AND, ITS ALWAYS A PLEASURE TO SEE SENATOR JOHN GLENN, THE FIRST AMERICAN IN ORBIT. YOU KNOW PART OF JOHN'S MISSION WAS TO SEARCH FOR SIGNS OF INTELLIGENT LIFE OUT THERE. WHICH TURNED OUT TO BE EXCELLENT TRAINING FOR HIS WORK INSIDE THE SENATE.]

ALL OF YOU HERE HAVE HAD IMPORTANT ROLES IN SUPPORTING THE U.S. SPACE PROGRAM. AND THAT SUPPORT COMES FROM MANY CORNERS. MANY OF YOU HAVE SEEN THESE WONDERFUL AD COUNCIL SPOTS THAT HIGHLIGHT HOW SPACE TECHNOLOGY BENEFITS ALL HUMANITY. AND I'D LIKE TO TAKE A MOMENT TO RECOGNIZE SOMEONE HERE WHO HAS CONTRIBUTED HER TIME AND TALENT TO THIS CAMPAIGN -- "AMERICA'S LEADING LADY" -- HELEN HAYES.

AS YOU MIGHT EXPECT FROM A FORMER NAVY PILOT WHO LIVED MUCH OF HIS ADULT LIFE IN HOUSTON -- I, TOO, AM A LONG-TIME SUPPORTER OF THE SPACE PROGRAM -- AND THE FINE WORK OF THE MEN AND WOMEN GATHERED HERE. IN OUR ADMINISTRATION'S FIRST BUDGET PROPOSAL -- THE LARGEST SINGLE PERCENTAGE INCREASE IS FOR THE SPACE AGENCY.

THANKS TO YOU AND YOUR COLLEAGUES AT NASA, 20 YEARS AFTER APOLLO 11, WE STILL LIVE IN A WORLD THAT IS ALIVE WITH WONDER. TWO WEEKS AGO, VOYAGER TWO DISCOVERED A NEW MOON AROUND NEPTUNE. WE ARE STILL GETTING ACQUAINTED WITH NEIGHBORHOODS WE DIDN'T EVEN KNOW ABOUT.

ON THE WAY BACK FROM OUR OWN MOON, BUZZ ALDRIN SPOKE OF THE NEVER-ENDING WONDER OF SPACE. "THIS HAS BEEN FAR MORE THAN THREE MEN ON A VOYAGE TO THE MOON," HE SAID. "THIS STANDS AS A SYMBOL OF THE INSATIABLE CURIOSITY OF ALL MANKIND TO EXPLORE THE UNKNOWN."

AND, I MIGHT ADD, THAT VOYAGE -- LIKE THE EFFORTS THAT CAME BEFORE, AND THE EFFORTS THAT HAVE COME SINCE -- IS ALSO A SYMBOL OF ALL THE MEN AND WOMEN OF UNIQUE TALENT AND CHARACTER WHO MADE IT POSSIBLE -- A TRIBUTE TO THE COMMITMENT, INGENUITY, AND NERVE OF TENS OF THOUSANDS OF PEOPLE WORKING ALL ACROSS THE NATION.

NO ONE KNOWS BETTER THAN THOSE ASSEMBLED HERE, THAT APOLLO'S MISSIONS TO THE MOON RAISED MORE QUESTIONS THAN THEY ANSWERED.



MY COMMITMENT TODAY TO FORGE AHEAD WITH A SUSTAINED MANNED EXPLORATION PROGRAM -- MISSION BY MISSION -- THE SPACE STATION, THE MOON, MARS AND BEYOND -- IS A CONTINUING COMMITMENT TO ASK NEW QUESTIONS, TO SEEK NEW ANSWERS. BOTH IN THE HEAVENS -- AND ON EARTH.

JAMES MICHENER WAS RIGHT WHEN HE TOLD CONGRESS:
"THERE ARE MOMENTS IN HISTORY WHEN CHALLENGES OCCUR OF
SUCH A COMPELLING NATURE THAT TO MISS THEM IS TO MISS
THE WHOLE MEANING OF AN EPOCH. SPACE IS SUCH A
CHALLENGE."

WELL, TODAY'S ANNOUNCEMENT IS OUR RECOGNITION THAT
THE CHALLENGE WAS NOT MERELY ONE THAT BELONGED TO THE
1960'S -- IT IS ONE THAT WILL OCCUPY AMERICANS FOR
GENERATIONS TO COME.

AND THE AMERICAN PEOPLE HAVE LED THE WAY ON THIS -- THE
AMERICAN PEOPLE WANT US BACK IN SPACE -- AND THIS
TIME -- BACK IN SPACE TO STAY.

SOMEWHERE OUT THERE -- MAYBE ON THE MALL TODAY,
MAYBE LISTENING ON A RADIO SOMEWHERE -- THE AMERICANS
WHO WILL FIRST WALK ON MARS ARE NOW ONLY CHILDREN --
PERHAPS YOUR CHILDREN.



- 13 -

AND ALONG WITH OUR CONGRATULATIONS TO ALL OF YOU -- WE LEAVE YOU TODAY WITH THE HOPE OF THAT DAY, WHEN ANOTHER PRESIDENT STANDS WITH THOSE PIONEERS, AND ECHOES THE LAST WORDS SPOKEN TO THE DEPARTING APOLLO 11: "GOOD LUCK, AND GODSPEED."

THANKS FOR YOUR CONTRIBUTIONS TO THE GREATNESS OF THIS COUNTRY. GOD BLESS YOU. AND "GOD BLESS THE U.S.A."

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THE WHITE HOUSE
WASHINGTON

OMB

NASA 20
Ed 16.7
HUD 12.4
State 13.9

1. NASA budget
2. NASA # of employees
3. Michener quote
Frank Martin

(McNally/Simon)
July 14, 1989, 10:00 a.m.
Draft One (BBQ)

PRESIDENTIAL REMARKS: ASTRONAUTS BARBECUE PICNIC
WHITE HOUSE SOUTH LAWN
THURSDAY, JULY 20, 1989, 12 NOON

Thank you, _____, and welcome -- welcome all of you -- America's astronauts and spouses, our friends in Congress, and other honored guests. Welcome back to the White House. And welcome back to space. ?

*Mrs. Bush's
office
7/17 K6633*

Barbara and I appreciate you joining us for this important anniversary. When I first heard that there would be a celebration on that historic summer day in 1969 that blasted America to new concepts about space and our place in the universe -- I thought they meant Woodstock.

And thanks also for joining us earlier today for the Apollo commemoration at the Air and Space Museum. From the sound of things there, it did seem like one or two of you might be interested in going back to the moon.

*Omni
Space
Almanac
p. 47*

Although for some, maybe that's just because we're a little older. I hear Alan Shepard wants to go back just so he can again feel what it's like to hit a golf ball more than 200 yards.

And Alan -- if you do go back -- I'd watch out for the new chairman of the National Space Council. The Vice President hits a mean 3-iron.

*Omni
Space
Almanac*

Actually, Jake Garn and Bill Nelson have been the only politicians in space so far. But there are voters who have threatened to send a few of the rest of us to the moon.

Jake and Bill sort of turned the tables on everybody. It used to be you became an astronaut in order to someday become a politician.

As you might expect from a former Navy pilot who lived ^{much} ~~most~~ of his adult life in Houston -- I am a long-time supporter of the space program -- and the fine work of the men and women gathered here. ~~In the budget we proposed -- the largest single percentage increase is for the space program.~~ *That's why I proposed a 22% increase in NASA's budget next year.*

Thanks to you and your colleagues at NASA, 20 years after Apollo 11 we still live in a world that is alive with wonder.

NASA see file
Two weeks ago Voyager Two discovered a new moon around Neptune.

We are still getting acquainted with neighbors we didn't even know about.

Nat'l. Geographic Dec. 69 p. 787
On the way back from our own moon, Buzz Aldrin spoke of the neverending wonder of space. "This has been far more than three men on a voyage to the moon," he said. "This stands as a symbol of the insatiable curiosity of all mankind to explore the unknown."

And, I might add, that voyage -- like the efforts that came before, and the efforts that have come since -- is also a symbol of all the men and women of unique talent and character who made it possible -- a tribute to the commitment, ingenuity, and nerve of tens of thousands of people working all across the nation.

Novine Noonan OMB X3534
No one knows better than those assembled here, that Apollo's missions to the moon raised more questions than they answered.

My commitment today to forge ahead with a sustained manned

exploration program -- decade by decade -- mission by mission -- the space station, the moon, Mars and beyond -- is a commitment to continue to ask new questions, to seek new answers. Both in the heavens -- and on Earth.

We agree with James Michener, who told Congress: "There are moments in history when challenges occur of such a compelling nature that to miss them is to miss the whole meaning of an epoch. Space is such a challenge."

Well, today's announcement is our recognition that the challenge was not merely one that belonged to the 1960's -- it is one that will occupy Americans for generations to come. And the American people have led the way on this -- the American people want us back in space -- and this time -- back in space to stay.

Somewhere out there -- maybe on the Mall today, maybe listening on a scratchy radio out in the hinterland -- the Americans who will first walk on Mars are now only children -- perhaps your children. And along with our congratulations to all of you -- we leave you today with the hope of that day, when another President stands with those pioneers, and echoes the last words spoken ~~on Earth~~ to the departing Apollo 11: "Good luck, and Godspeed."

Thanks for your contributions to the greatness of this country. God bless you. And "God bless the U.S.A."

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Testimony to subcomm. on Science, Techn. Transportation
2/1/79

NASA Log of Apollo 11

THE AUTHORITY SINCE 1868

THE WORLD ALMANAC

AND BOOK OF FACTS

1989

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WORLD ALMANAC
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NEW YORK

1989

MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31			27	28	29	30	31		

JULY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	1	2	3	4	5	6	7
8	9	10	11	12	13	14	15	16	17	18	19	20	21
22	23	24	25	26	27	28	29	30	31				

NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30				27	28	29	30	31		

ton's Birthday; March 26 — Easter; April 20 — Passover; May 29 — Memorial Day; Oct. 9 — Columbus Day and Yom Kippur; Nov. 7 — Election Day; Nov. 23 —

Distance Between Selected U.S. Cities

	Cincinnati	Denver	Detroit	Houston	Indianapolis	Kansas City	Los Angeles
Cincinnati	440	1,398	659	789	493	798	2,182
Denver	840	1,849	695	1,804	906	1,391	2,979
Detroit	287	996	266	1,067	181	499	2,054
Houston	1,164	1,164	259	1,029	106	591	2,179
Indianapolis	1,164	1,253	1,265	1,019	1,058	600	1,059
Kansas City	259	1,029	1,019	1,265	278	743	2,311
Los Angeles	1,06	1,058	278	987	710	710	1,538
Memphis	591	600	743	710	485	485	2,073
Minneapolis	2,179	1,059	2,311	1,538	2,073	1,589	1,817
Philadelphia	468	1,040	713	561	435	451	1,889
Portland	692	841	671	1,157	586	447	1,889
San Francisco	786	1,273	1,045	356	796	806	1,883
Seattle	647	1,771	637	1,608	713	1,198	2,786
St. Louis	693	537	716	865	587	201	1,595
Tampa	567	1,691	573	1,508	633	1,118	2,706
Washington	340	857	513	779	235	257	1,845
Phoenix	2,300	1,307	2,279	2,274	2,194	1,839	1,131
San Diego	736	681	909	478	631	248	1,452
San Jose	481	1,616	506	1,375	558	1,043	2,631

	Memphis	Minneapolis	Philadelphia	St. Louis	Seattle	Tampa	Washington
Memphis	371	1,068	741	541	2,518	772	608
Minneapolis	1,296	1,368	296	1,141	2,976	1,537	429
Philadelphia	530	405	738	289	2,013	683	671
St. Louis	468	692	567	340	2,300	736	481
Seattle	1,040	841	1,691	857	1,307	681	1,616
Tampa	713	671	573	513	2,279	909	506
Washington	561	1,157	1,508	779	2,274	478	1,375
Phoenix	435	586	633	235	2,194	631	558
San Francisco	451	447	1,118	257	1,839	248	1,043
San Diego	1,817	1,889	2,706	1,645	1,131	1,452	2,361
San Jose	826	826	1,000	285	2,290	401	867
Portland	390	1,214	1,143	552	1,608	695	1,076
San Antonio	1,100	1,207	1,211	673	2,574	647	1,078
San Jose	652	357	100	948	2,815	1,344	233
San Jose	1,000	1,143	1,183	449	1,638	387	1,116
San Jose	285	552	868	868	2,751	1,264	133
San Jose	2,290	1,608	2,751	2,081	2,081	396	793
San Jose	401	695	1,264	396	1,982	1,982	2,684
San Jose	867	1,076	133	793	2,684	1,189	...

Selected World Cities in Statute Miles

Distances are usually from City Hall

City	Caracas	Chicago	Hong Kong	Honolulu	Lima	London
100	10,555	8,570	1,077	6,609	12,244	5,944
161	5,238	4,414	5,443	7,320	6,896	583
180	6,342	6,141	5,066	8,948	7,726	2,185
...	6,366	8,491	7,376	11,535	6,072	5,989
166	...	2,495	10,185	6,021	1,707	4,655
191	2,495	7,797	7,797	4,256	3,775	3,958
176	10,165	4,256	5,556	...	5,947	5,990
135	6,021	4,256	5,556	...	5,947	5,990
189	4,855	3,958	5,990	...	5,947	7,240
169	3,632	1,745	7,240	2,557	4,171	5,439
108	4,346	4,189	6,558	7,872	5,907	785
125	9,717	9,673	4,595	5,505	8,059	10,500
119	2,234	1,690	8,788	3,789	2,639	5,558
122	2,438	745	7,736	4,918	3,970	3,254
179	6,177	4,987	4,437	7,047	7,862	1,564
103	2,120	714	8,060	4,969	3,639	3,469
86	4,732	4,143	5,990	7,449	6,370	214
44	8,950	6,604	1,217	5,077	10,349	5,074
81	2,804	5,282	11,009	8,288	2,342	5,750
31	5,195	4,824	5,774	8,040	6,750	895
48	3,902	1,859	6,905	2,398	4,518	5,367
08	11,402	9,372	1,605	6,726	11,689	6,747
23	5,471	4,331	5,063	6,875	7,166	842
54	8,808	6,314	1,791	3,859	9,631	5,959
35	5,559	4,679	5,147	7,366	7,215	905
95	2,047	596	8,155	4,838	3,509	3,674
...
co	Mon-	Mos-	New	New	Paris	Peking
93	8,338	4,389	1,813	8,669	5,877	2,046
56	3,740	1,006	3,598	3,979	548	4,584
00	5,427	1,803	2,758	5,619	1,998	4,698
19	7,922	6,279	5,769	7,803	5,796	8,044
34	2,438	6,177	8,833	2,120	4,732	8,950
90	745	4,987	7,486	714	4,143	6,604
88	7,736	4,437	2,339	8,060	5,990	1,217
89	4,918	7,047	7,412	4,969	7,449	5,077
58	3,254	1,564	4,181	3,469	214	5,074
42	2,427	6,068	7,011	2,451	5,601	6,250
43	3,448	2,147	4,530	3,593	655	5,745
26	10,395	8,950	6,329	10,359	10,430	5,643
...	2,317	6,676	9,120	2,090	5,725	7,753
17	...	4,401	7,012	331	3,432	6,519
76	4,401	...	2,696	4,683	1,554	3,607
90	331	4,683	7,318	...	3,636	6,844
25	3,432	1,554	4,102	3,636	5,120	5,120
53	6,519	3,607	2,353	6,844
34	5,078	7,170	8,753	4,801	5,684	10,788
77	4,104	1,483	3,684	4,293	690	5,063
37	2,543	5,885	7,691	2,572	5,577	5,918
27	9,203	5,228	2,571	9,534	6,673	2,771
12	3,714	716	3,414	3,986	1,003	4,133
35	6,471	4,660	3,638	6,757	6,053	4,325
37	4,022	721	3,277	4,270	852	4,325
35	489	4,876	7,500	205	3,840	6,942
...
a-	Stock-	Teheran	Tokyo	Vienna	Warsaw	Wash., D.C.
13	5,089	3,391	2,865	5,252	5,033	6,807
54	528	2,185	5,557	326	322	4,181
17	2,096	1,234	9,568	1,481	1,819	5,822
28	6,423	5,241	9,154	5,856	5,935	7,895
12	5,471	7,320	8,808	5,372	5,559	2,047
42	4,331	6,502	6,314	4,696	4,679	596
35	5,063	3,843	1,791	5,431	5,147	8,155
26	6,875	8,070	3,859	7,632	7,366	4,838
17	942	2,743	5,959	771	905	3,674
17	5,454	7,682	5,470	6,108	5,922	2,300
10	1,653	2,978	6,706	1,128	1,427	3,792
19	9,630	7,826	5,062	9,790	9,598	10,180
17	6,012	8,184	7,035	6,320	6,337	1,885
13	3,714	5,880	6,471	4,009	4,022	489
18	716	1,532	4,660	1,043	721	4,876
14	3,986	6,141	6,757	4,234	4,270	205
3	1,003	2,625	6,053	645	852	3,840
1	4,133	3,490	1,307	4,648	4,325	6,942
15	6,883	7,374	11,532	6,127	6,455	4,779
19	1,245	2,127	6,142	477	820	4,497
8	5,399	7,362	5,150	5,994	5,854	2,441
...	5,936	4,103	3,300	6,035	5,843	9,662
16	...	2,173	5,053	780	494	4,183
10	5,053	4,775	...	5,689	5,347	6,791
3	494	1,879	5,689	347	...	4,472
2	4,183	6,341	6,791	4,438	4,472	...

AEROSPACE

Memorable Manned Space Flights

Sources: National Aeronautics and Space Administration and The World Almanac.

Crew, date	Mission name	Orbits	Duration	Remarks
Yuri A. Gagarin (4/12/61)	Vostok 1	1	1h 48m	First manned orbital flight.
Alan B. Shepard Jr. (5/5/61)	Mercury-Redstone 3	(2)	15m 22s	First American in space. Spacecraft sank. Grissom rescued.
Virgil I. Grissom (7/21/61)	Mercury-Redstone 4	(2)	15m 37s	First space flight of more than 24 hrs.
Gherman S. Titov (8/6-7/61)	Vostok 2	16	25h 18m	First American in orbit. Manual retrofire error caused 250 mi. landing overshoot. Vostok 3 and 4 made first group flight.
John H. Glenn Jr. (2/20/62)	Mercury-Atlas 6	3	4h 55m 23s	First American in orbit. Manual retrofire error caused 250 mi. landing overshoot. Vostok 3 and 4 made first group flight.
M. Scott Carpenter (5/24/62)	Mercury-Atlas 7	3	4h 56m 05s	Closest splashdown to target to date (4.5 mi.). First U.S. evaluation of effects on man of one day in space. Vostok 5 and 6 made 2d group flight.
Andrian G. Nikolayev (8/11-15/62)	Vostok 3	64	94h 22m	On first orbit it came within 3 miles of Vostok 3.
Pavel R. Popovich (8/12-15/62)	Vostok 4	48	70h 57m	Closest splashdown to target to date (4.5 mi.). First U.S. evaluation of effects on man of one day in space. Vostok 5 and 6 made 2d group flight.
Walter M. Schirra Jr. (10/3/62)	Mercury-Atlas 8	6	9h 13m 11s	First woman in space.
L. Gordon Cooper (5/15-16/63)	Mercury-Atlas 9	22	34h 19m 49s	First 3-man orbital flight: first without space suits.
Valery F. Bykovsky (6/14-6/19/63)	Vostok 5	81	119h 06m	Leonov made first "space walk" (10 min.). First manned spacecraft to change its orbital path.
Valentina V. Tereshkova (6/16-19/63)	Vostok 6	48	70h 50m	White was first American to "walk in space" (20 min.). First use of fuel cells for electric power; evaluated guidance and navigation system.
Vladimir M. Komarov, Konstantin P. Feoktistov, Boris B. Yegorov (10/12/64)	Voskhod 1	16	24h 17m	Longest duration Gemini flight
Pavel I. Belyayev, Aleksei A. Leonov (3/18/65)	Voskhod 2	17	26h 02m	Completed world's first space rendezvous with Gemini 7. First docking of one space vehicle with another; mission aborted, control malfunction.
Virgil I. Grissom, John W. Young (3/23/65)	Gemini-Titan 3	3	4h 53m 00s	First use of Agena target vehicle's propulsion systems. Docked, made 2 revolutions of earth tethered; set Gemini altitude record (739.2 mi.). Final Gemini mission; record 5½ hrs. of extravehicular activity. Crashed after re-entry killing Komarov.
James A. McDivitt, Edward H. White 2d (6/3-7/65)	Gemini-Titan 4	62	97h 56m 11s	First manned flight of Apollo spacecraft command-service module only. Made rendezvous with unmaned Soyuz 2.
L. Gordon Cooper Jr., Charles Conrad Jr. (8/21-29/65)	Gemini-Titan 5	120	190h 55m 14s	First flight to moon (command-service module only); views of lunar surface televised to earth.
Frank Borman, James A. Lovell Jr. (12/4-18/65)	Gemini-Titan 7	206	330h 35m 31s	Docked with Soyuz 5.
Walter M. Schirra Jr., Thomas P. Stafford (12/15-16/65)	Gemini-Titan 6-A	16	25h 51m 24s	First manned flight of Apollo spacecraft command-service module only. Made rendezvous with unmaned Soyuz 2.
Neil A. Armstrong, David R. Scott (3/16-17/66)	Gemini-Titan 8	6.5	10h 41m 26s	First flight to moon (command-service module only); views of lunar surface televised to earth.
John W. Young, Michael Collins (7/18-21/66)	Gemini-Titan 10	43	70h 46m 39s	First use of Agena target vehicle's propulsion systems. Docked, made 2 revolutions of earth tethered; set Gemini altitude record (739.2 mi.). Final Gemini mission; record 5½ hrs. of extravehicular activity. Crashed after re-entry killing Komarov.
Charles Conrad Jr., Richard F. Gordon Jr. (9/12-15/66)	Gemini-Titan 11	44	71h 17m 08s	First manned flight of Apollo spacecraft command-service module only. Made rendezvous with unmaned Soyuz 2.
James A. Lovell Jr., Edwin E. Aldrin Jr. (11/11-15/66)	Gemini-Titan 12	59	94h 34m 31s	First flight to moon (command-service module only); views of lunar surface televised to earth.
Vladimir M. Komarov (4/23/67)	Soyuz 1	17	26h 40m	Docked with Soyuz 5.
Walter M. Schirra Jr., Donn F. Eisele, R. Walter Cunningham (10/11-22/68)	Apollo-Saturn 7	163	260h 09m 03s	Docked with Soyuz 4; Yeliseyev and Khrunov transferred to Soyuz 4.
Georgi T. Beregovoi (10/26-30/68)	Soyuz 3	64	94h 51m	First manned flight of lunar module.
Frank Borman, James A. Lovell Jr., William A. Anders (12/21-27/68)	Apollo-Saturn 8	10 ¹	147h 00m 42s	First manned flight of lunar module.
Vladimir A. Shatalov (1/14-17/69)	Soyuz 4	45	71h 14m	First manned flight of lunar module.
Boris V. Volyanov, Aleksei S. Yeliseyev, Yevgeny V. Khrunov (1/15-18/69)	Soyuz 5	46	72h 46m	First manned flight of lunar module.
James A. McDivitt, David R. Scott, Russell L. Schweickart (3/3-13/69)	Apollo-Saturn 9	151	241h 00m 54s	First manned flight of lunar module.

THE WHITE HOUSE
WASHINGTON

July 18, 1989

MEMORANDUM FOR CHRISS WINSTON

FROM:

BOB SIMON 

SUBJECT:

ADDITIONAL COMMENTS ON THE ASTRONAUT BBQ SPEECH

On page 2, paragraph 2, (draft 2) I had previously been unable to check the accuracy of the last sentence regarding the increase in the space budget. Subsequent to my July 15 memo, I had OMB confirm that NASA did indeed get the largest proposed percentage increase of all the departments and major independent agencies. However, to clarify that the President is talking about agency budgets and not individual programs, the last words should be changed from "space program" to "space agency."

Also in the same paragraph, the President has "lived most of his adult life" in Washington, not Houston. He lived in Houston during the early and mid-60s and from 1977-80. Houston is his political and "spiritual" home, but he hasn't actually lived there much. I suggest changing the word "most" to "much." It conveys the same sentiment, but is not as specific.

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FROM/LOCATION

1. Jim Cicconi / Paris, France

TO/LOCATION/TIME OF RECEIPT

1. Counsel Gray

2. Fred McClure

3. Jim Pinkerton

TOR 151358z

4. John Gardner

5. Chris Winston - FYI, x2930

6.

7.

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Document No. _____

SENSITIVE
WHITE HOUSE STAFFING MEMORANDUM

DATE: 07/15/89 ACTION/CONCURRENCE/COMMENT DUE BY: NOON Sunday 07/16

SUBJECT: PRESIDENTIAL REMARKS: ASTRONAUTS BARBECUE PICNIC

(07/15 1:00 pm. draft 2)

	ACTION FYI			ACTION FYI	
VICE PRESIDENT	<input type="checkbox"/>	<input type="checkbox"/>	MCCLURE	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SUNUNU	<input type="checkbox"/>	<input checked="" type="checkbox"/>	NEWMAN	<input type="checkbox"/>	<input type="checkbox"/>
SCOWCROFT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PORTER	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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BATES	<input type="checkbox"/>	<input type="checkbox"/>	UNTERMAYER	<input type="checkbox"/>	<input type="checkbox"/>
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CARD	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Pinkerton</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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DEMAREST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>
FITZWATER	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>
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REMARKS: Please provide any comments/recommendations directly to Chriss Winston in the Senior Staff Office, Rm. 1051, by NOON, Sunday 07/16, with an info copy to Jim Cicconi, Rm. 1051. Rhanks.

RESPONSE: _____

SENSITIVE

James W. Cicconi
Assistant to the President
and Deputy to the Chief of Staff

(McNally/Simon)
July 15, 1989, 1:00 p.m.
Draft Two (BBQ)

PRESIDENTIAL REMARKS: ASTRONAUTS BARBECUE PICNIC
WHITE HOUSE SOUTH LAWN
THURSDAY, JULY 20, 1989, 12:00 NOON

Thank you, _____, and welcome -- welcome all of you -- America's astronauts and spouses, our friends in Congress, and other honored guests. Welcome back to the White House. And **welcome back to space.**

Barbara and I appreciate you joining us for this important anniversary.

And thanks also for joining us earlier today for the Apollo commemoration at the Air and Space Museum. From the sound of things there, it did seem like one or two of you might be interested in going back to the Moon.

Although for some, maybe that's just because we're a little older. I hear Alan Shephard wants to go back just so he can again feel what it's like to hit a golf ball more than 200 yards. X

And Alan -- if you do go back -- I'd watch out for the new chairman of the National Space Council. The Vice President hits a mean 3-iron.

Actually, Jake Garn and Bill Nelson have been the only politicians in space so far. But there are voters who have threatened to send a few of the rest of us to the Moon.

Jake and Bill sort of turned the tables on everybody. It used to be you became an astronaut in order to someday become a politician.

- 2 -

As you might expect from a former Navy pilot who lived ^{much} most of his adult life in Houston -- I am a long-time supporter of the space program -- and the fine work of the men and women gathered here. In the budget we proposed -- the largest single percentage increase is for the space program.

Thanks to you and your colleagues at NASA, 20 years after Apollo 11, we still live in a world that is alive with wonder. Two weeks ago, Voyager Two discovered a new moon around Neptune. We are still getting acquainted with neighborhoods we didn't even know about.

On the way back from our own Moon, Buzz Aldrin spoke of the never-ending wonder of space. "This has been far more than three men on a voyage to the moon," he said. "This stands as a symbol of the insatiable curiosity of all mankind to explore the unknown."

And, I might add, that voyage -- like the efforts that came before, and the efforts that have come since -- is also a symbol of all the men and women of unique talent and character who made it possible -- a tribute to the commitment, ingenuity, and nerve of tens of thousands of people working all across the Nation.

No one knows better than those assembled here, that Apollo's missions to the Moon raised more questions than they answered.

[My commitment today to forge ahead with a sustained manned exploration program -- decade by decade -- mission by mission -- the space station, the Moon, Mars and beyond] -- is a commitment

- 3 -

to continue to ask new questions, to seek new answers. Both in the heavens -- and on Earth.

James Michener was right when he told Congress: "There are moments in history when challenges occur of such a compelling nature that to miss them is to miss the whole meaning of an epoch. Space is such a challenge."

Well, today's announcement is our recognition that the challenge was not merely one that belonged to the 1960's -- it is one that will occupy Americans for generations to come. And the American people have led the way on this -- [the American people want us back in space -- and this time -- back in space to stay].

Somewhere out there -- maybe on the Mall today, maybe listening on a scratchy radio out in the hinterland -- the Americans who will first walk on Mars are now only children -- perhaps your children. And along with our congratulations to all of you -- we leave you today with the hope of that day, when another President stands with those pioneers, and echoes the last words spoken ~~on Earth~~ to the departing Apollo 11: "Good luck, and Godspeed."

Thanks for your contributions to the greatness of this country. God bless you. And "God bless the U.S.A."

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U.S. CIVILIAN SPACE POLICY

HEARINGS
BEFORE THE
SUBCOMMITTEE ON
SCIENCE, TECHNOLOGY, AND SPACE
OF THE
COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE
NINETY-SIXTH CONGRESS
FIRST SESSION
ON
U.S. CIVILIAN SPACE POLICY

JANUARY 25, 31, AND FEBRUARY 1, 1979

Serial No. 96-10

Printed for the use of the
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WASHINGTON : 1979

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program through remuneration from the private sector; you would need to get the other 75, or 80 percent from the Government.

We feel that the level of activity which the Government is going to engage in over the next few years, plus what the private sector is going to do, including the growth opportunities in the private sector, could constitute enough of a base on which to build a viable commercially successful Earth-sensing program.

Senator STEVENSON. Yes, sir?

Dr. SEEMANN. I would like to make a last comment. I have been approached by several people. I didn't want to close out without saying something.

As I mentioned, in my career space policy had affected my career goals. There are a lot of young people probably sitting in that same situation now.

I am also on the AIAA and several other technical societies. We are trying to do work on education in the secondary schools to make the students aware of research and development in space and aeronautical programs and higher technology.

I would encourage somewhere in the writing of your bill, perhaps an endorsement that the educational process should be such that there is an awareness of this for the future of our country.

Thank you.

Senator STEVENSON. Very good. Thank you, gentlemen.

Our next witnesses were not invited to appear as a panel, but I will ask them to come forward in order to expedite our hearings. Maybe they will engage in some questioning among themselves.

Prof. Gerald Wasserburg of the Division of Geology and Planetary Sciences of the California Institute of Technology—let's have some order, please—Mr. Jeffrey Irons of the American Institute of Astronautics and Aeronautics; and Mr. James A. Michener.

Gentlemen, we are grateful to you for joining us. Can we proceed with you, Mr. Michener?

STATEMENTS OF JAMES A. MICHENER, JEFFREY IRONS, AND GERALD WASSERBURG

Mr. MICHENER. Yes. As I say, Senator, the only justification for my being here in a hearing so technical is that for many years I have been directing all of my attention to the rise and fall of nations and what makes them strong and also what makes them weak. In doing that, certain generalizations develop, one of which is that a nation in a position of leadership—and that would exclude the small nation which is merely surviving on the periphery—a nation in a position of leadership is obligated to grapple with the great problems of the age in which it is operating. I don't think it has the option of ignoring those great problems.

Now, the problems can be of manifold nature. They are being religious, as in the case of the coming of Muhammad. They can be technological, as in the great revolution in Britain in the period when they were developing the industrial society.

They can be of the nature of empire building as it was in the days of Rome. It can be the spiritual problem of governing many societies, as in the case of Greece.

When I think of a nation of any magnitude, I think it runs a great risk if it in any way ignores these great problems which time

and the passage of history and new inventions throw up as the great problems of that age.

I would think that the United States would be almost in peril if it were to abruptly halt its experiments and explorations and adjustments to the age of space in which I would include aviation and the stellar explorations which we have been undergoing.

I think this is something that has been thrown at us in the inevitable movement of history. I don't think we have the option to back away from it.

How we grappled with it, how we budget our time, how we pass laws to permit the Nation to do it in an orderly way is beyond my competence. I can't even give advice on that; but I certainly, from my studies, have a strong feeling that nations are thrown into positions which they cannot ignore.

[The statement follows:]

STATEMENT OF JAMES A. MICHENER

The only justification for allowing me to appear before your Committee is that for some years I have been studying the rise and fall of nations and in so doing have reached certain conclusions governing that process.

There seem to be great tides which operate in the history of civilization, and nations are prudent if they estimate the force of those tides, their genesis and the extent to which they can be utilized. A nation which guesses wrong on all its estimates is apt to be in serious trouble if not on the brink of decline. Toward the middle of the Fifteenth Century the minds of sensible men were filled with speculations about the nature of their world, and although not much solid evidence was available, clever minds could piece together the fragments and achieve quite remarkable deductions.

Prince Henry the Navigator of Portugal occupies a curious place in history. He never captained one of his ships; he never sailed on any voyage of exploration; in fact, he stayed at home devouring old books, new rumors and future guesses, and from this melange constructed a view of the world that was extraordinarily accurate, even though he died some thirty years before Portuguese explorers brought proof of his theories.

Christopher Columbus had very little solid data to work with, but he had clever intuitions and a powerful capacity to piece together odd bits of information, leading him to conclusions that resulted in the effective discovery of America.

Nations at that time faced problems comparable to those faced by individuals like Columbus, Vasco da Gama and Sebastian Cabot. They had to decide whether they wanted to participate in the exploration of the world, and if so to what degree of commitment. Those like Portugal and Spain, who made early and fast decisions, gained empires of fantastic richness. Others like disoriented Germany and Italy, who did not perceive the possibilities, suffered grave disadvantages and never caught up. England and France were very tardy, but in the end the first made a stunning recovery, the latter never did.

I am not primarily interested in either the exploits of a few daring captains or the economic advantages of the nations they represented. The more lasting effect was on the spirit of the times, that wonderful enlarging of the human consciousness when it realized that the old definitions no longer applied, when it knew that the world consisted of a great deal more than Europe. To have missed the explorations was regrettable, but to have missed this spiritual awakening would have been disastrous. France and Sweden are excellent examples of nations which did little of the manual work but which reaped the intellectual rewards of the period. One might almost argue that Portugal and Spain dragged home the raw material for France and Sweden to codify and digest, proving that any nation can participate in the great swing of civilization according to its peculiar capabilities. Portugal provided daring sea captains. England provided able administrators. And France provided the philosophers. Those which provided nothing lost an entire cycle of historical experience from which they never fully recovered.

Nor do I think that the rewards resulting from participation in a great cycle need be permanent, reaching down to all generations. I am quite content if my nation gains enlightenment or riches or advantages of other kinds for a respectable period. It can't be the hullaballoo of a single day or week, nor the celebration without

foundation of some accidental accomplishment with little subsequent meaning. But if a nation responds to a challenge, succeeds in its effort, garners the rewards for a sensible period, and then loses the commanding position, I think no harm has been done. The nation has gleaned from that experience about all that it was destined to achieve, and a great good has been accomplished, because then the nation is prepared psychologically to tackle the next big problem when it comes along. And it surely will, for the life of any nation since the beginning of history has been a record of how it confronted the great challenges that inevitably came its way.

It may be unfortunate that I started these remarks with Portugal and its navigational and colonizing victories, as if they were the only kind that mattered. Actually, I would place them in second position, somewhat down the line in the scale of historical values. It is triumphs in the world of ideas and concepts that loom largest in my thinking, and I would like to stipulate several to give you a clue to my thinking. Today we are witnessing in the Near East the phenomenal vitality of the ideas promulgated some thirteen hundred years ago by Muhammad; these ideas have always been far more powerful than the empire put together by Portugal. The entire civilized world is indebted to the miracles that occurred in England during Elizabeth's reign and that of James I: I mean the extraordinary combination of Shakespeare's plays and the new translation of the Bible into English. These works fixed the English language as a tool of great beauty, great potential, and I often think of the Bible in its King James translation when someone tells me that no committee ever accomplishes anything. Two of the greatest documents of our language were written by committees, our English Bible and our American Constitution. The trick, it seems, is to assemble the right committee.

I would place in this pantheon of great ideas Sigmund Freud's analysis of human behavior and Karl Marx's dissection of production and distribution. For any nation to have missed the significance of these powerful movements was to have missed the meaning of contemporary history.

Certainly, the world was changed by that cascade of brilliant industrial inventions produced by England in the late 1700s and early 1800s. We live today on the consequences of that industrial revolution. And I would include our own nation's enviable capacity to finance, organize and manage large industrial corporations.

Finally, of course, the historian must think of the impact of Christ's teachings two thousand years ago. They had a far greater importance than any mere exploration or conquest or empire.

But history is a grand mix of concepts, actions, organizing and commitments which determines the extent to which any nation can achieve a good life for its citizens, and I believe without question that if a nation misses the great movements of its time it misses the foundations on which it can build for the future.

One word of caution. I am not here speaking of either fad or fashion. I am not extolling the attractive ephemeral. And I am certainly not sponsoring the idea that was so fashionable in the 1930s, that German Nazism represented "the wave of the future." Anyone who subscribed to that idea had a very limited view of what the future of the human race could be, and few fashionable ideas have ever crumbled so fast and so disastrously. The senate of any nation is obligated to discern the merely fashionable when it offers itself and reject it.

Suppose that all I have said is true, which would be a miracle equal to those we've been discussing. Where does that leave the United States in relation to its space program? I am competent to comment on only three aspects, leaving the more technical details to others.

Are there non-military advantages to be gained from a space program?

The high technical requirements for success in space are so fundamental that spin-off rewards are almost automatic. Radio, television, medical instrumentation, miniaturizing, watches, new food processes, communications, health advances and improvement in clothing are some of the few advantages which I myself have gained because of the space program, and I am speaking only of small items which can be comprehended and used by the individual.

If one considers the larger items, like intercontinental communications satellites, the mapping of weather patterns, the analysis of soils and forests, the exploration for minerals including oil, the management of fisheries and the like, the potential rewards are multiplied many times.

And the nature of human intelligence is such that no one today can even guess the limits of either the personal items or the industrial which might accrue from the basic scientific work that has to be done in a space program. I have followed our past space adventures about as carefully as an uneducated layman could, and I have a rather imaginative mind, but I anticipated almost none of these significant

by-products, and I doubt if any of us in this room today could predict where the next contributions will be made.

I have heard one impressive argument against what I am saying now. A man of some probity said, "If we had applied our scientific brains to these problems, we could have solved them all at one-tenth the cost." He is right. Had the Congress twenty years ago set aside a substantial budget, and had it authorized the assembling of a body of top scientists, and had it provided them with spacious laboratories and told them, "Devise a computerized navigational instrument that will operate regardless of where in space it is stationed," this could surely have been done. But neither Congress nor the human mind works that way. It is only when great felt needs spur the imagination that certain accomplishments become possible. As a project by itself few of the bonuses cited above would have materialized; as part of a national effort with a clearly defined goal they all came into being, and others like them will follow.

Are there military advantages to be gained from a space program?

I would be terrified today if only Russian and Chinese vehicles were orbiting in space. Their military advantage would be so tremendous that we might almost suffer as a nation a kind of psychological shock from which we might never recover. For we would certainly be at their mercy.

I fear that the potentials of space warfare have even yet not been impressed upon the American public. We do not realize the overwhelming advantage a nation would enjoy if it alone commandeered space, if it alone could direct by radio beam when and where an object or its cargo was to be brought down to earth. Any nation which allowed its enemies such a superiority would be doomed.

But if all nations have the capacity to utilize space defensively, then the peril is diminished and reasonable arrangements can be worked out. But only through parity can this be done.

Therefore, the United States must have a sensible space program, whether it wants one or not. To fail to keep up with new developments in this field would be disastrous, and any administration which permitted a lag should be condemned. We must know what the capabilities of space are, and we must retain our proficiency in using them.

I think we have done a fairly good job in this area so far, and I would suppose that from our strength we would be able to deal intelligently with those other nations who have attained or will attain a comparable capacity. This is the great unknown ocean of the universe and we in 1979 are as obligated to probe it and use it and participate in its control as the nations of Europe were obligated to explore their terrestrial oceans in 1479.

The future and the safety of those nations depended upon their mastery of the seas; ours depends in shocking measure to our cautious control of space, and if we abandon it to others we condemn ourselves.

Are there spiritual advantages to be gained from a space program?

The spirit of man, and the resolve of a nation, are tenuous things, to be fortified by the strangest experiences or destroyed by the most unanticipated accidents. Outward events influence them but inner resolves usually determine outcomes. A novelist sees men and women destroy themselves because the will to survive has been lost; the historian watches nations go down because of fatal wrong choices which sap the national energy. Usually the tragedy occurs when inner convictions are lost, or when a sense of general frustration or waning purpose prevails.

It is extremely difficult to keep a human life or the life of a nation moving forward with enough energy and commitment to lift it into the next cycle of experience. My own life has been spent chronicling the rise and fall of human systems, and I am convinced that we are all terribly vulnerable.

I do not for a moment believe that the spiritual well-being of our nation depends primarily upon a successful space program. There are, as William James said, moral equivalents to war, moral substitutes for any charismatic national experience. I am sure we could as a nation attain great spiritual reassurance from rebuilding our cities or distributing our farm produce better. And my experience in the arts has taught me to be suspicious of late fashions or high styles. Space programs are stylish today and run the risk of being abused.

But I also believe that there are moments in history when challenges occur of such a compelling nature that to miss them is to miss the whole meaning of an epoch. Space is such a challenge. It is the kind of challenge William Shakespeare sensed nearly four hundred years ago when he wrote: "There is a tide in the affairs of men, Which taken at the flood, leads on to fortune; Omitted, all their voyage of their life Is bound in shallows and in miseries. On such a full sea are we now afloat, And we must take the current when it serves, Or lose our ventures."

We risk great peril if we kill off this spirit of adventure, for we cannot predict how and in what seemingly unrelated fields it will manifest itself. A nation which loses its forward thrust is in danger, and one of the most effective ways to retain that thrust is to keep exploring possibilities. The sense of exploration is intimately bound up with human resolve, and for a nation to believe that it is still committed to forward motion is to ensure its continuance.

I doubt if there is a woman or man in this room who honestly believes that the United States could ever fall backward, as other nations have within our lifetime. Intuitively we feel that we are exempt. Yet for us to think so is to fly in the face of all history, for many nations at their apex were inwardly doomed because their will power had begun to falter, and soon their vulnerability became evident to all. Enemies do not destroy nations; time and the loss of will brings them down.

Therefore we should be most careful about retreating from the specific challenge of our age. We should be reluctant to turn our back upon the frontier of this epoch. Space is indifferent to what we do; it has no feeling, no design, no interest in whether we grapple with it or not. But we cannot be indifferent to space, because the grand slow march of our intelligence has brought us, in our generation, to a point from which we can explore and understand and utilize it. To turn back now would be to deny our history, our capabilities.

Each era of history progresses to a point at which it is eligible to wrestle with the great problem of that period. For the ancient Greeks it was the organization of society; for the Romans it was the organization of empire; for the Medievalists the spelling out of their relationship to God; for the men of the Fifteenth and Sixteenth Centuries the mastery of the oceans; and for us it is the determination of how mankind can live in harmony on this finite globe while establishing relationships to infinite space.

I was not overly impressed when men walked upon the moon, because I knew it to be out there at a specific distance with specific characteristics, and I supposed that we had enough intelligence to devise the necessary machinery to get us there and back. But when we sent an unmanned object hurtling into distant space, and when it began sending back signals—a chain of numbers to be exact—which could be reassembled here on earth to provide us with a photograph of the surface of Mars, I was struck dumb with wonder. And when computers began adjusting the chain of numbers, augmenting some, diminishing others, so that the photographs became always more clear and defined, I realized that we could accomplish almost anything, here in the farthest reaches of space.

My life changed completely on the day I saw those Mars photographs, for I had participated in that miracle. My tax dollars had helped pay for the project. The universities that I supported had provided the brains to arm the cameras. And the government that I helped nourish had organized the expedition. I saw the universe in a new light, and myself and my nation in a new set of responsibilities. My spirit was enlarged and my willingness to work on future projects fortified.

No one can predict what aspect of space will invigorate a given individual, and there must have been millions of Americans who did not even know Mars had been photographed. But we do know that in previous periods when great explorations were made, they reverberated throughout society. Dante and Shakespeare and Milton responded to the events of their day. Scientists were urged to new discoveries. And nations modified their practices.

All the thoughts of men are interlocked, and success in one area produces unforeseen successes in others. It is for this reason that a nation like ours is obligated to pursue its adventure in space. I am not competent to say how much money should be spent. I am not competent to advise on how the program should be administered. But I am convinced that it must be done.

Senator STEVENSON. Can you remain, Mr. Michener, until we hear from the other witnesses?

Mr. MICHENER. I would be honored to do so, sir.

Senator STEVENSON. Thank you.

Professor Wasserburg?

Mr. WASSERBURG. Mr. Chairman, members of the committee, I am pleased to have this opportunity to appear before the Subcommittee on Science Technology and Space. As a professor, I must welcome questions, including those which have no clear-cut answers. It is possible that I may even provide you answers for which there are no clear questions.

ders on the way. Ground control noticed irregular heartbeats as well, and doctors were concerned—thus the order to rest. Because the astronauts were somewhat disoriented, they had difficulty recognizing their whereabouts in relation to Cone Crater. In the most disappointing moment of the mission, Shepard and Mitchell turned back to *Antares*, not realizing they were only about 75 feet (23 meters) from the crater's rim. Still, they had traveled much farther than the first four astronauts on the moon.

At the end of the second EVA, Shepard did something that would win him a place in the trivia book craze of the 1980s. He became the moon's first golfer. Just before he entered *Antares* and left the moon's surface for the last time, he removed golf balls from a pocket and with a makeshift club—a detached handle from one of the geological implements—sent them soaring through the lunar vacuum. His golfer's form was unusual because his bulky spacesuit forced him to do one-arm swings. "There it goes," said Shepard, "miles and miles and miles." Later on he estimated that the first ball went 200 yards (183 meters) and the second went 400 yards (366 meters).

Edgar Mitchell also attempted a from-the-moon first. During his personal time and rest periods on the mission, he carried out an experiment in mental telepathy with four people back in the United States. Using a deck of twenty five cards, each with its own symbol, Mitchell attempted to transmit impressions of the cards to the people back on earth. Did the telepathy experiment work? The best score was fifty-one symbols out of two hundred—not very impressive, considering the fact that random guessing can score forty out of two hundred. Mental telepathy from the moon apparently did not succeed in this experiment.

Some 94 pounds (42.6 kilograms) of lunar material were collected and returned to earth, much of it precisely documented as to location and geological content. The lunar ricksha was used to transport the rocks.

Apollo 14 was the first moon mission to ac-

complish a rendezvous between *Antares*, the lunar module, and *Kitty Hawk*, the command spacecraft, during the first orbit—about two hours after lift-off rather than the usual four or five hours. To accomplish this, the ascent engine was burned a second time.

Apollo 14 created two artificial moonquakes so that scientists could study the seismic measurements recorded by the instruments Apollo flights had set up on the moon. Such measurements would help experts learn about the moon's interior structure.

First, the Saturn-5's third stage was sent on a collision course with the moon. The impact force equaled the explosive power of eleven tons of TNT, and the moon reacted like a bell, vibrating for up to three hours. The vibrations traveled to a depth of 22 to 25 miles (35 to 40 kilometers).

Second, once Shepard and Mitchell were back in the *Kitty Hawk* after their moon expedition, Mission Control sent *Antares* crashing to the moon. Although its impact force was not as powerful as the third-stage crash (equivalent to 1,600 pounds, 725 kilograms, of TNT), it was a scientific milestone because it was recorded by two moon seismic stations—those of *Apollo 12* and *Apollo 14*—which gave more accurate information about the moon's structure. The resulting tremors lasted about ninety minutes.

The third manned moon mission was the most complex lunar voyage yet flown, and it was successful. It gave the oldest astronaut and the first American in space, Alan Shepard, some new records to hold. His space days were over, but he had some lunar memories to cherish after *Apollo 14*'s safe landing in the Pacific south of Samoa on February 9, 1971.

Apollo 15: Endeavor and Falcon

The last three Apollo flights to the moon incorporated major design changes in the lunar module, which allowed the astronauts to more than double their exploration time to the moon. *Apol-*



LOG OF APOLLO 11

NASA

National Aeronautics and
Space Administration

The hold down clamps were released and the space vehicle began moving slowly upward from the pad, as near 9:32 a.m. as human effort could make it.

As it reached the top of the service tower, the hard-edged clattering thunder of the firing engines rolled over the scrubby Florida landscape and engulfed the viewers like a tidal wave. They witnessed the beginning of the fifth manned Apollo flight, the third to the vicinity of the Moon and the first lunar landing mission.

From Launch Control the last words were: "Good Luck and Godspeed." Commander Armstrong replied: "Thank you very much. We know this will be a good flight."

9:35 a.m. -- The spacecraft is 37 nautical miles high, downrange 61 nautical miles and traveling at 9,300 feet per second or about 6,340 miles per hour. Armstrong confirms the engine skirt and launch escape tower separations.

9:44 a.m. -- With the three Saturn stages fired one after another and the first two jettisoned, Apollo 11 enters a 103 nautical mile-high Earth orbit, during which the vehicle is carefully checked by the astronauts and by the ground control crew.

12:22 p.m. -- Another firing of the third-stage engine, still attached to the command service module, boosts Apollo 11 out of orbit midway in its second trip around the Earth and onto its lunar trajectory at an initial speed of 24,200 miles an hour.

12:49 p.m. -- While the spacecraft moves farther and farther from Earth, the lunar landing craft, code-named Eagle, is unpacked from its compartment atop the launch rockets. The astronauts first fire some explosive bolts. These cause the main spaceship, given the name Columbia, to separate from the adapter and blow apart the four panels that make up its sides, exposing the lunar module (LM) tucked inside. They stop the spacecraft about 100 feet away -- 34 feet farther than they were supposed to -- turn the ship around, facing the landing craft, and dock head-to-head with it. The docking complete, the LM's connections with the adapter are blown loose and the mated command/service and lunar modules separate from the rocket and continue alone toward the Moon.

2:38 p.m. -- By dumping its leftover fuel the third rocket stage is fired into a long solar orbit to remove it from Apollo 11's path.

Posted: Tue, Jul 11, 1989 4:13 PM EDT
2824-3880

Msg: JJIJ-

From: MBMURRILL
To: JMcCulla
Subj: Voyager Status Report, July 11, 1989

Voyager 2's discovery last week of a new Neptunian moon has scientists rethinking theories about the origin of Triton.

The new moon, 1989 N1, orbits Neptune in a tidy, nearly circular orbit around the planet's equator. The orderliness of its orbit makes it an anomaly when compared with the two other known Neptunian moons, Triton and Nereid, which occupy unruly orbits around the planet. Triton's orbit is retrograde, or backward, and inclined at about 20 degrees to the equator. Nereid has a prograde, or forward, orbit that is inclined 30 degrees to Neptune's equator.

Before last week's discovery, scientists thought that because of Triton's peculiar retrograde and tilted orbit, it must have been a body wandering the solar system alone when it was captured by Neptune. But now, with the discovery of 1989 N1, "The difficulty we have is that we've found a moon in a place we didn't think one should have existed," said assistant project scientist Dr. Ellis Miner.

If Triton were a relative newcomer to the Neptune system, Miner said, it would have passed near enough to the low orbit of any preexisting moon such as 1989 N1 either to collide with it or sweep it up through gravitational attraction. Therefore, the existence of 1989 N1 in the orbit it occupies suggests that Triton may not be a captured object, but instead be a native to Neptune. Theoreticians are now battling with this new discovery to see if the Triton-as-captured-object theory can be salvaged or if alternative explanations for its retrograde orbit can be found.

DISTANCE FROM EARTH: 2,675,488,000 miles
DISTANCE FROM NEPTUNE: 40,999,000 miles
HELIOCENTRIC VELOCITY: 42,198 mph



EXATACHROME BY ROBERT W. MAUDEN © N.A.S.

the trailer on *Hornet*. They
an olive branch—symbol

life of his career Army
I Collins's youth—his
Oklahoma, New York,
ico, and Washington.
I noticeably easygoing
best marks in mathe-
restling team.
int, Collins became an
he found his ultimate
am. Flying with Gem-
ace, at one point tum-
rifying moment.

of peace—to the moon. The carrier crew dubbed
the recovery operation "Hornet plus three."

Aldrin Colleagues call Col. Edwin Eugene
(Buzz) Aldrin, Jr., "the best scientific mind in
space," and say he could correct a computer. All
his life he has striven to excel: as studious high-
schooler and football center in Montclair, New
Jersey; as mathematics-loving West Pointer, grad-
uating third in his class; as an Air Force pilot who
downed two MIG's in Korea.
Earning his doctorate at MIT in 1963, Aldrin
wrote a thesis on orbital rendezvous that material-
ly advanced the space effort. During the flight of
Gemini 12, he walked in space for 5½ hours.

as well as the 21st launch in the Saturn series.
And if life begins at 40, that too is symbolic,
for the day after the flight began marked the
40th anniversary of Robert Goddard's first
launching of an instrumented rocket, com-
plete with thermometer, barometer, and
camera.

Apollo 11 was in addition a momentous
adventure, the most widely shared adventure
in all history.

It was, as well, a technological triumph of
the highest order, made possible only by the
sustained effort during the past decade of
hundreds of thousands of persons and the
expenditure of some 22 billion dollars.

It involves so complex a technology that no
one man can begin to comprehend what lies
behind it: the tons of blueprints; the 20 thou-
sand contractors; the 20 million pages of
manuals, instructions, and other material
printed monthly by the Kennedy Space Cen-
ter alone; the rocket and spacecraft encom-
passing more than five million separate parts;
the engines—most powerful in the world—
that gulp 15 tons of kerosene and liquid oxy-
gen a second and get five inches to the gallon;
the telemetry that during launch sends back
to Houston each second enough information
to fill an encyclopedia volume.

Man's Long Reach to the Unknown

But above all, Apollo 11 was a triumph of
the human spirit. As Buzz Aldrin said in a TV
broadcast while coming home from the moon,
"This has been far more than three men on a
voyage to the moon. . . . This stands as a sym-
bol of the insatiable curiosity of all mankind
to explore the unknown."

At the President's dinner honoring the
astronauts shortly after their release from
quarantine, Neil Armstrong brought tears
to the eyes of many when he said, in a voice
filled with emotion:

"We hope and think . . . that this is the be-
ginning of a new era, the beginning of an era
when man understands the universe around
him, and the beginning of the era when man
understands himself."

But with all the congratulations, and all
the pride of accomplishment, Buzz Aldrin
struck perhaps the finest note of all when, on
the way home from the lunar conquest, he
read to a listening world this moving passage
from the eighth Psalm of the Old Testament:

"When I consider thy heavens, the work of
thy fingers, the moon and the stars, which
thou hast ordained; What is man, that thou
art mindful of him?" * * *

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET

ROUTE SLIP

TO Bob Simon	Take necessary action <input type="checkbox"/>
Speech Writing Office	Approval or signature <input type="checkbox"/>
EOB/WHO Room 111 1/2	Comment <input type="checkbox"/>
	Prepare reply <input type="checkbox"/>
	Discuss with me <input type="checkbox"/>
	For your information <input type="checkbox"/>
	See remarks below <input type="checkbox"/>
FROM Memphis Norman	DATE July 18, 1989

REMARKS

Backup material re calculations on NASA
percentage of total Federal Budget.

(See page 3)



HISTORICAL TABLES BUDGET OF THE UNITED STATES GOVERNMENT

FISCAL YEAR

1990

Table 5.2 -- BUDGET AUTHORITY BY AGENCY: 1976 - 1994
(in millions of dollars)

Department or other unit	1983	1984	1985	1986	1987	1988	1989 est.	1990 est.
Legislative Branch.....	1,687	1,770	1,705	1,722	1,875	2,127	2,114	2,139
The Judiciary.....	823	904	1,052	1,044	1,267	1,338	1,506	1,541
Executive Office of the President.....	101	109	116	108	118	125	127	272
Funds Appropriated to the President.....	6,590	18,946	20,364	10,709	13,002	11,656	10,123	12,335
Agriculture.....	69,921	46,824	61,916	59,249	52,518	55,236	59,664	50,843
Commerce.....	1,923	2,016	2,309	1,980	2,155	2,450	2,759	3,151
Defense-Military.....	238,900	258,176	286,827	281,436	279,469	283,755	290,186	305,645
Defense-Civil.....	19,591	19,225	30,347	32,682	35,137	36,329	38,007	38,134
Education.....	15,397	15,423	19,077	17,872	19,608	20,234	22,186	25,886
Energy.....	11,893	10,953	12,618	10,559	10,125	11,163	11,963	12,404
Health and Human Services-except social security	116,833	128,000	141,107	156,535	159,715	177,043	196,062	214,108
Health and Human Services-social security.....	163,380	171,429	190,973	196,802	221,992	253,289	282,931	309,332
Housing and Urban Development.....	16,561	18,148	31,398	15,928	14,657	14,949	14,912	16,758
Interior.....	4,956	4,917	5,016	4,589	5,279	5,246	5,561	2,953
Justice.....	3,046	3,461	3,848	3,865	5,210	5,630	6,404	6,882
Labor.....	36,413	34,826	27,660	28,839	30,252	30,684	31,660	31,379
State.....	2,759	2,979	3,562	4,039	3,765	3,757	3,893	4,437
Transportation.....	26,308	28,596	28,770	28,079	26,122	27,169	28,428	27,772
Treasury.....	117,237	141,638	166,101	179,675	181,857	204,104	227,519	245,010
Veterans Affairs.....	25,324	26,477	27,298	27,075	27,363	29,432	29,771	29,963
Environmental Protection Agency.....	3,688	4,064	4,346	3,446	5,344	4,968	5,079	4,787
General Services Administration.....	393	247	309	287	281	184	-21	-13
National Aeronautics and Space Administration...	7,065	7,458	7,573	7,807	10,923	9,062	10,954	13,148
Office of Personnel Management.....	35,724	37,695	41,606	44,200	44,775	48,141	50,615	53,275
Small Business Administration.....	1,278	971	1,254	714	604	418	419	437
Other Independent Agencies.....	11,368	16,998	15,561	18,497	18,789	25,900	27,796	21,137
Allowances.....	---	---	---	---	---	---	---	-364
Undistributed offsetting receipts.....	-51,078	-52,329	-58,656	-64,967	-72,310	-78,863	-87,916	-102,141
(On-budget).....	(-47,455)	(-46,975)	(-52,029)	(-57,780)	(-63,720)	(-67,066)	(-71,857)	(-81,702)
(Off-budget).....	(-3,623)	(-5,354)	(-6,627)	(-7,186)	(-8,590)	(-11,798)	(-16,059)	(-20,439)
Total budget authority.....	888,082	949,921	1,074,057	1,072,773	1,099,893	1,185,526	1,272,703	1,331,210

18-Jul-89

BUDGET AUTHORITY BY AGENCY
(IN MILLIONS OF DOLLARS)

DEPARTMENT OR OTHER UNIT	1989 EST	1990 EST	INCREASE	PERCENT
Legislative Branch	2114	2138	24	1.135288
The Judiciary	1506	1541	35	2.324037
Executive Office of the President	127	272	145	NA
Funds Appropriated to the President	10123	12336	2213	NA
Agriculture	59664	50843	-8821	-14.7844
Commerce	2759	3151	392	14.20804
Defense-Military	290186	305645	15459	5.327272
Defense-Civil	38007	38134	127	0.334148
Education	22186	25886	3700	16.67718
Energy	11963	12404	441	3.686366
Health and Human Services, excl Soc Sec	196062	214108	18046	9.204231
Health and Human Services, Social Security	282931	309332	26401	9.331250
Housing and Urban Development	14912	16758	1846	12.37929
Interior	5561	2953	-2608	-46.8980
Justice	6404	6882	478	7.464084
Labor	31660	31379	-281	-0.88755
State	3893	4437	544	13.97379
Transportation	28428	27772	-656	-2.30758
Treasury	227519	245010	17491	7.687709
Veteran Affairs	29771	29963	192	0.644922
Environmental Protection Agency	5079	4787	-292	-5.74916
General Services Administration	-20	-13	7	NA
National Aeronautics and Space Admin.	10954	13148	2194	20.02921
Office of Personnel Management	50615	53275	2660	5.255359
Small Business Administration	419	437	18	4.295942
Other Independent Agencies	27796	21137	-6659	-23.9566
Allowances	0	364	364	NA
Undistributed Offsetting Receipts	-87916	-102141	-14225	16.18021
(On-Budget)	(-71857)	(-81702)	(-9845)	NA
(Off-Budget)	(-16059)	(-20439)	(-4380)	NA
			0	
Total Budget Authority	1272703	1331210	58507	4.597066