NPS Form 10-900
(7-81)

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received
date entered

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Space Flight Operations Facility

and/or common Space Flight Operations Facility

2. Location

street & number Jet Propulsion Laboratory ___ not for publication

city, town Pasadena ___ vicinity of **congressional district**

state California **code** 06 **county** Los Angeles **code** 037

3. Classification

Category	Ownership	Status	Present Use	
___ district	X public	X occupied	___ agriculture	___ museum
X building(s)	___ private	___ unoccupied	___ commercial	___ park
___ structure	___ both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	X yes: restricted	X government	X scientific
	___ being considered	___ yes: unrestricted	___ industrial	___ transportation
		___ no	___ military	X other: Space Exploration

4. Owner of Property

name National Aeronautics and Space Administration (NASA)

street & number

city, town Washington ___ vicinity of **state** D.C. 20546

5. Location of Legal Description

courthouse, registry of deeds, etc. National Aeronautics and Space Administration (NASA)

street & number Real Property Management Office Code NXG

city, town Washington **state** D.C. 20546

6. Representation in Existing Surveys

title None **has this property been determined eligible?** ___ yes ___ no

date ___ federal ___ state ___ county ___ local

depository for survey records

city, town **state**

7. Description

Condition		Check one	Check one
_X_ excellent	___ deteriorated	___ unaltered	_X_ original site
___ good	___ ruins	_X_ altered	___ moved date _____
___ fair	___ unexposed		

Describe the present and original (if known) physical appearance

The Space Flight Operations Facility (SFOF) is at the Jet Propulsion Laboratory (JPL) in Pasadena, California. The SFOF is where spacecraft tracking and scientific data are received and processed from JPL's Deep Space Network.

The SFOF was constructed in 1963 and is composed of three floors and a basement. The SFOF is a square building with a standby powerhouse extending from the basement on the west side. The entire structure encloses 122,074 square feet. All parts of the building, except for parts of the basement and the standby power house, are air-conditioned to precise tolerances. The exterior of the structure has a rock and concrete face.

At the heart of the SFOF is the Network Operations Control Center which provides a centralized control point for NASA's Deep Space Network. The Network Operations Control Center has two separate functional elements: Network Operations Control and Network Data Processing.

The Network Operations Control Center houses control consoles, video displays, projection screens, status and operation displays, closed circuit television communication links and telephones necessary to control and monitor deep space flight operations. The Network Data Processing Center houses the computers and the data storage and processing facilities necessary to support the Network Operations Control Center. Other areas of the building house offices, public viewing areas and additional support facilities for the Network Operations Control Center.

The SFOF is an active NASA facility supporting various ongoing NASA projects including the tracking of the Voyager Spacecraft. It has continually been modified and its equipment upgraded since it was built and put into operation in 1964.

8. Significance

Period	Areas of Significance—Check and justify below				
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion	
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science	
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture	
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian	
___ 1700–1799	___ art	_X_ engineering	___ music		
___ 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ theater	
_X_ 1900–	_X_ communications	___ industry	___ politics/government	___ transportation	
		___ invention		_X_ other (specify) Space Exploration	

Specific dates 1963-Present **Builder/Architect** NASA

Statement of Significance (in one paragraph)

The Jet Propulsion Laboratory from the beginning of its association with NASA in 1958 has served as the primary NASA center for the unmanned exploration of the planets. The first version of the Space Flight Operations Facility was built in 1958 to support the Explorer 1 satellite. This mission control center was in a single room that housed all the communications, recording, and other support equipment necesasary for Explorer 1. By 1961, with the coming of Project Ranger to explore the moon, it was obvious that a more elaborate mission control center was necessary. The Space Flight Operations Facility was constructed to replace the original Explorer 1 mission control center and to provide the depth of technical support needed by newer generations of unmanned spacecraft.

The Space Flight Operations Facility was constructed to be part of the Deep Space Network (DSN). The main elements in the DSN are the Deep Space Instrumentation Facility (DSFI), the Ground Communications System (GCS), and the Space Flight Operations Facility (SFOC).

The DSIF is a network of tracking and communications stations located approximately 120 degrees apart in longitude to insure that a spacecraft is always within the field of at least one of the tracking stations.

The GCS consists of voice, teletype and high speed data circuits that link each tracking station with both Cape Canaveral and the SPOF.

The SPOF at the Jet Propulsion Laboratory is the focal point of the Deep Space Network. The Space Flight Operations Facility is significant because it is the hub of the vast communications network through which NASA controls its unmanned spacecraft flying in deep space. Commands that control spacecraft flying millions of miles from the earth are sent from the Network Control Center in the Space Flight Operations Facility. Scientific and engineering information generated by unmanned spacecraft is transmitted to the Space Flight Operations Facility. Inasmuch as the Jet Propulsion Laboratory is NASA's primary center for the unmanned exploration of the planets, the Space Flight Operations Facility is the heart and mind of the Jet Propulsion Laboratory. The Mariner, Viking, Pioneer, and Voyager projects that have explored the planets and solar environment have all been controlled for at least part of their missions in this facility. The vast harvest of scientific information concerning the planets and the universe gathered by these spacecraft first saw the light of day and were read by technicians working in the Space Flight Operations Facility.

9. Major Bibliographical References

See continuation sheets

10. Geographical Data

Acreage of nominated property Less than 1 acre

Quadrangle name Pasadena **Quadrangle scale** 1:24,000

UMT References

	Zone	Easting	Northing		Zone	Easting	Northing
A	11	391870	3784880	B			
C				D			
E				F			
G				H			

Verbal boundary description and justification

The boundary of the Space Flight Operations Facility is shown as the green line on the map entitled "Space Flight Operations Facility Location Map."

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
state	code	county	code

11. Form Prepared By

name/title Harry A. Butowsky

organization National Park Service **date** May 15, 1984

street & number Division of History **telephone** (202) 343-8168

city or town Washington, D.C. 20240 **state**

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national ___ state ___ local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature

title date

For NPS use only

I hereby certify that this property is included in the National Register

date

Keeper of the National Register

Attest: date

Chief of Registration

The scale of the achievements of NASA's planetary exploration program over the last twenty years is staggering. Like the great early explorers of human history, Columbus, Magellan, Balboa, Cortes, and Champlain the unmanned spacecraft of NASA, Ranger, Mariner, Pioneer, Viking and Voyager have opened new worlds to human understanding and comprehension. The Space Flight Operations Facility for this period of time has been at the heart of this operation. Through the achievements of modern technology and communications the entire human family was able to travel to the planets and experience the thrill of discovery. The Space Flight Operations Facility is the symbol of this technology and the resource most closely associated with the unmanned planetary exploration program of the Jet Propulsion Laboratory and the National Aeronautics and Space Administration.

Bibliography

Corliss, William R. A History of the Deep Space Network. Washington, D.C.: National Aeronautics and Space Administration, 1976.

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Koppes, Clayton R. JPL and the American Space Program: A History of the Jet Propulsion Laboratory. New Haven: Yale University Press, 1982.

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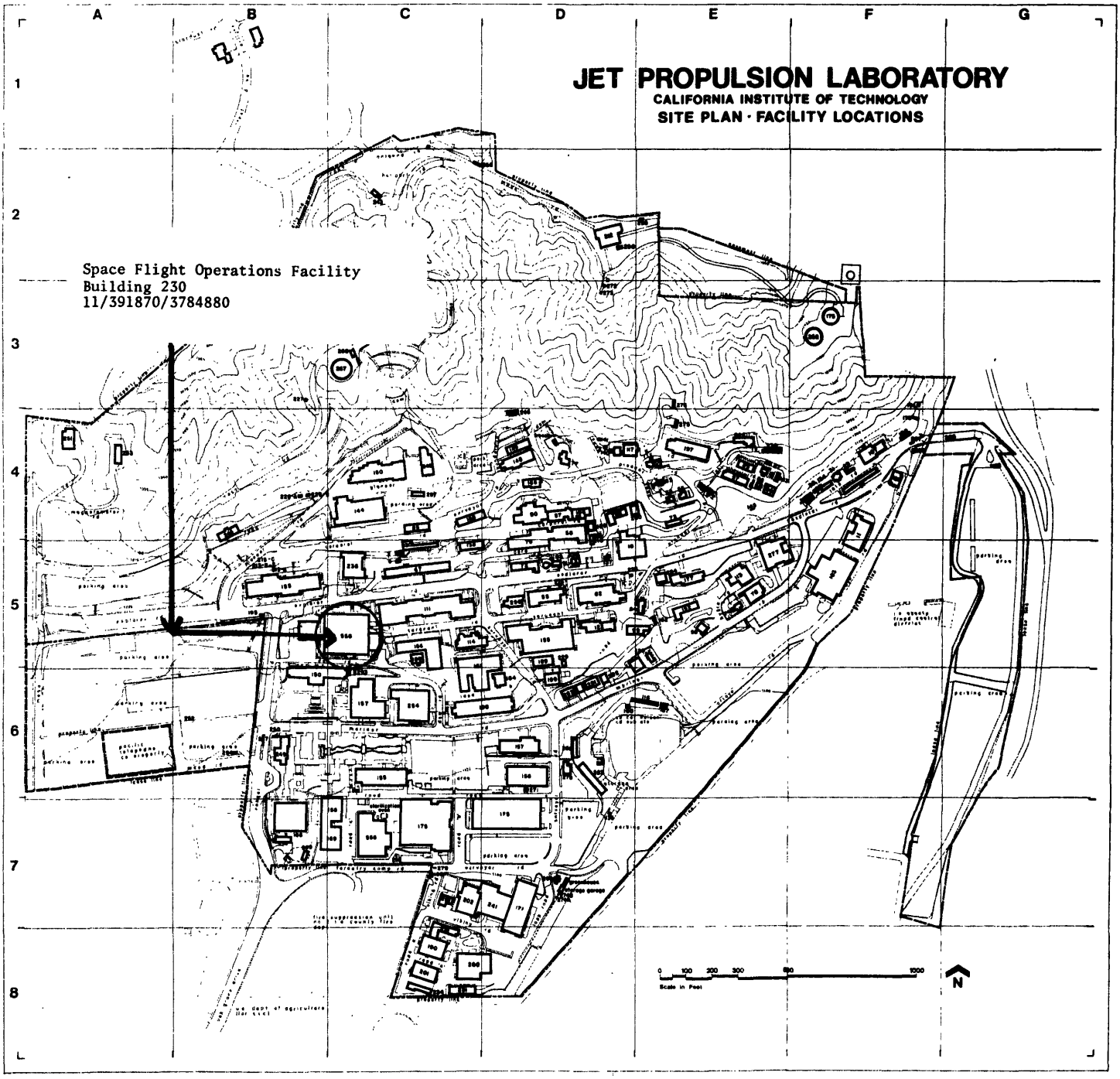
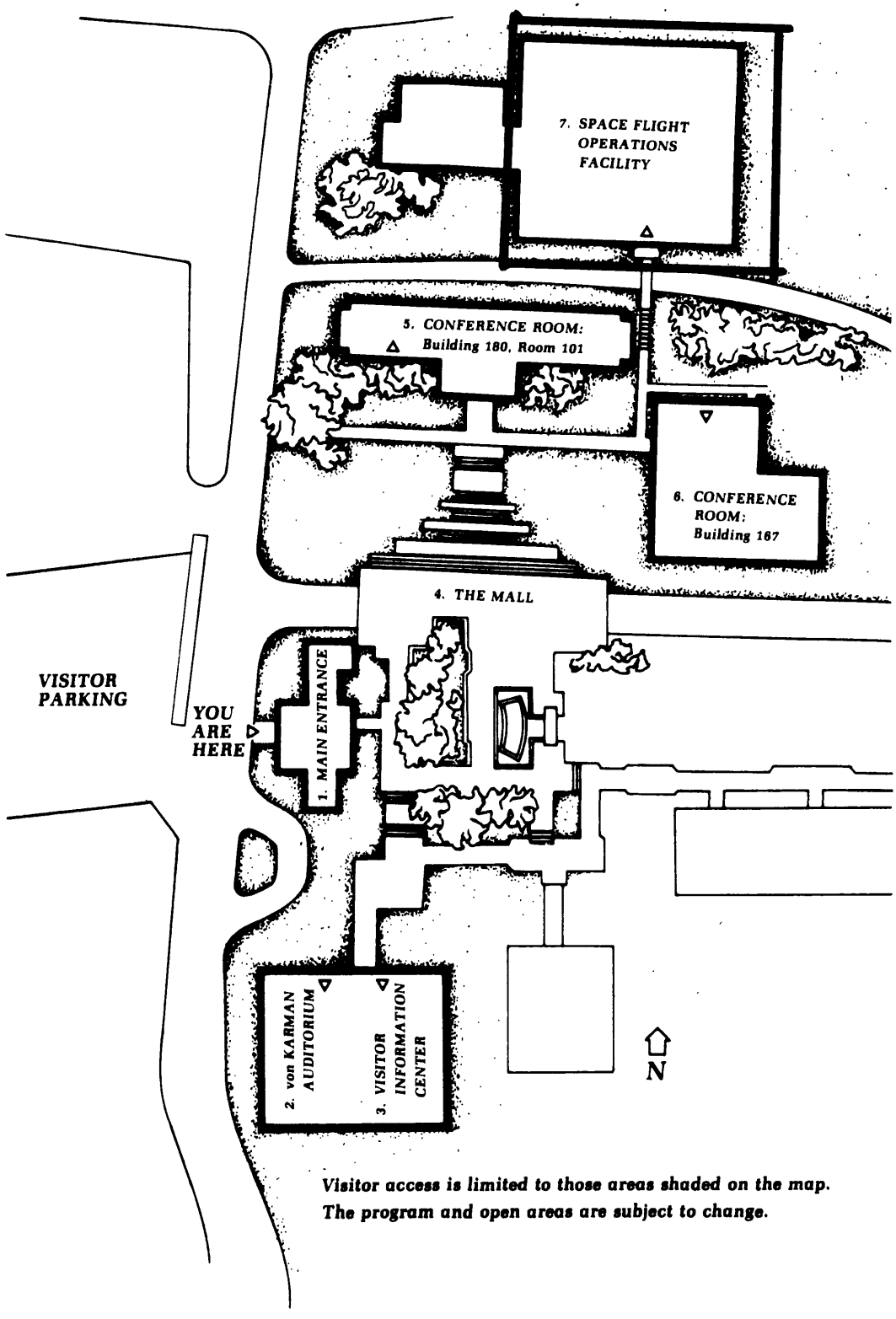
Washburn, Mark. Distant Encounters: The Exploration of Jupiter and Saturn. New York: Harcourt Brace Jovanovich, 1983.


JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY
SITE PLAN · FACILITY LOCATIONS
Space Flight Operations Facility
Building 230
11/391870/3784880
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
0
100
200
300
600
1000
Scale in Feet
N

Space Flight Operations Facility Location Map



Visitor access is limited to those areas shaded on the map. The program and open areas are subject to change.