

United States Department of the Interior
National Park Service

For NPS use only

National Register of Historic Places
Inventory—Nomination Form

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not for publication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
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input checked="" type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input checked="" type="checkbox"/> government
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
		<input type="checkbox"/> no	<input type="checkbox"/> military
			<input checked="" type="checkbox"/> 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

excellent
 good
 fair

deteriorated
 ruins
 unexposed

Check one

unaltered
 altered

Check one

original site
 moved date _____

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 powerhouse, 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			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/ humanitarian
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900-	<input checked="" type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input checked="" type="checkbox"/> other (specify) Space Exploration
	<input type="checkbox"/> invention			

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 necessary 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

Acreeage of nominated property Less than 1 acre

Quadrangle name Pasadena

Quadrangle scale 1:24,000

UMT References

A

1	1	3	9	1	8	7	0	3	7	8	4	8	8	0
Zone			Easting				Northing							

B

Zone			Easting				Northing							

C

Zone			Easting				Northing							

D

Zone			Easting				Northing							

E

Zone			Easting				Northing							

F

Zone			Easting				Northing							

G

Zone			Easting				Northing							

H

Zone			Easting				Northing							

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
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state	code	county	code
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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 _____

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

date _____

Keeper of the National Register

Attest: _____ date _____

Chief of Registration

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Continuation sheet

Item number 8

Page 2

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.

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Continuation sheet

Item number 9

Page 1

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Newell, Homer E. Beyond the Atmosphere: Early Years of Space Science. Washington, D.C.: National Aeronautics and Space Administration, 1980.

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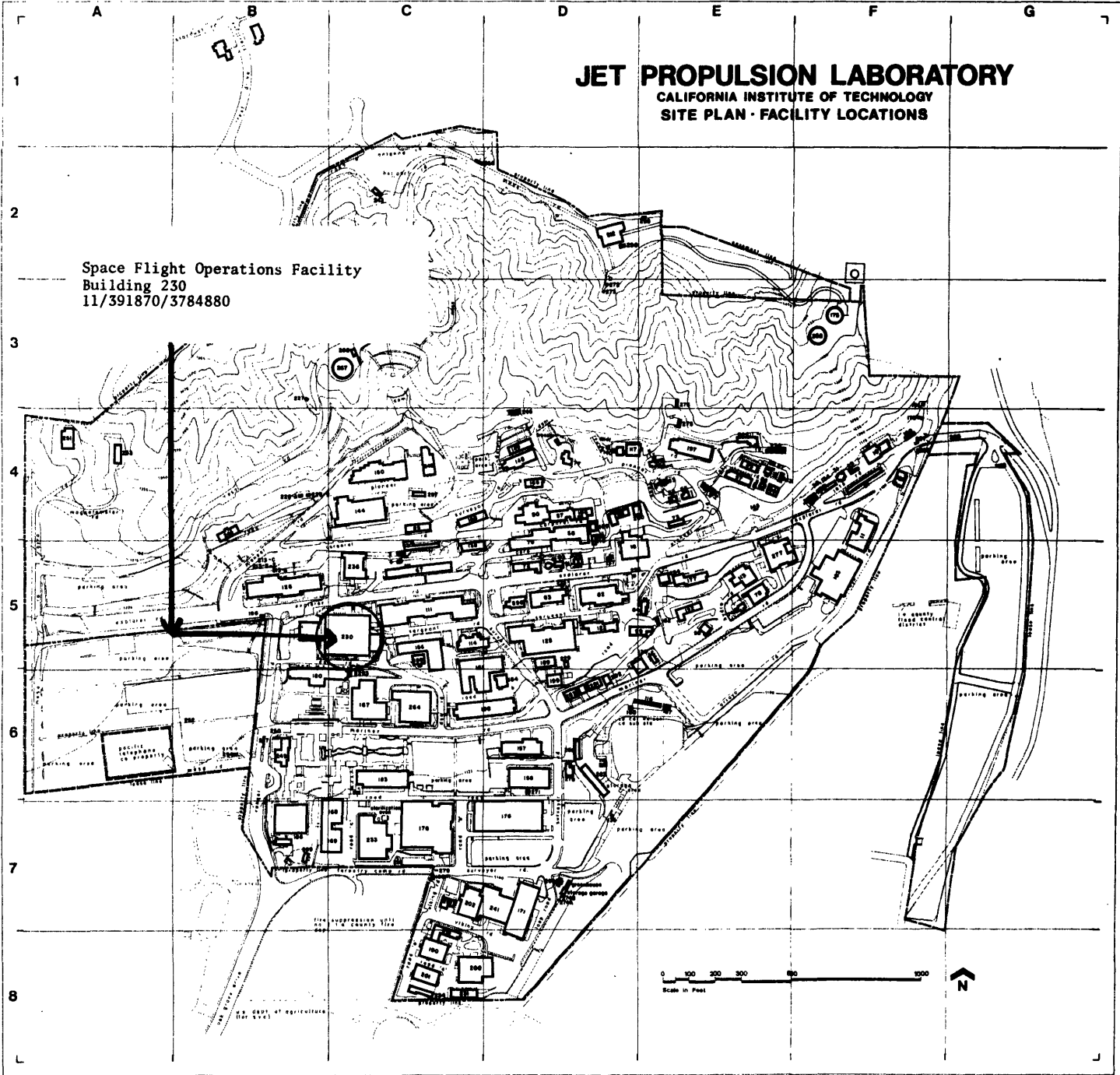
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Washburn, Mark. Distant Encounters: The Exploration of Jupiter and Saturn. New York: Harcourt Brace Jovanovich, 1983.

JET PROPULSION LABORATORY

CALIFORNIA INSTITUTE OF TECHNOLOGY
SITE PLAN - FACILITY LOCATIONS

Space Flight Operations Facility
Building 230
11/391870/3784880



Space Flight Operations Facility Location Map

