Form No. 10-300 (Rev. 10-74)

Theme: Americans at Work
Subtheme: Science and Invention

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: EDWIN POWELL HUBBLE HOUSE

AND/OR COMMON: Same

2 LOCATION

STREET & NUMBER: 1340 Woodstock Road — __NOT FOR PUBLICATION

CITY, TOWN: San Marino — __ VICINITY OF — CONGRESSIONAL DISTRICT: 24th

STATE: California — CODE: 06 — COUNTY: LOS ANGELES — CODE: 037

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
__DISTRICT	__PUBLIC	X OCCUPIED	__AGRICULTURE	__MUSEUM
X BUILDING(S)	X PRIVATE	__UNOCCUPIED	__COMMERCIAL	__PARK
__STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL	X PRIVATE RESIDENCE
__SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	__IN PROCESS	__YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
	__BEING CONSIDERED	__YES: UNRESTRICTED	__INDUSTRIAL	__TRANSPORTATION
		X NO	__MILITARY	__OTHER:

4 OWNER OF PROPERTY

NAME: Mr. and Mrs. Robert Mollno

STREET & NUMBER: 1340 Woodstock Road

CITY, TOWN: San Marino — __ VICINITY OF — STATE: California

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.: Hall of Records

STREET & NUMBER: 320 Temple Street

CITY, TOWN: Los Angeles — STATE: California

6 REPRESENTATION IN EXISTING SURVEYS

TITLE: None

DATE:

__FEDERAL __STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS

CITY, TOWN — STATE

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
X EXCELLENT	__DETERIORATED	X UNALTERED	X ORIGINAL SITE
__GOOD	__RUINS	__ALTERED	__MOVED DATE_____
__FAIR	__UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Edwin Powell Hubble House is located in San Marino, California. The building is a two story stucco single family residence. It was constructed in 1925. The architect, Joseph Kucera, designed many residential homes in the Los Angeles area. Although the house is an excellent example of 1920's so-called California Mission Style, it does not appear to be of national architectural significance. On the first floor are an entry hall, living room, dining room, library, kitchen, maid's room, and bath. The second floor contains two bedrooms and a bath. No alterations, either to the exterior or to the interior, have been made since the Hubble period. The house possesses full integrity and is very well maintained.

Thirteen Forty Woodstock Road was the home of Edwin Powell Hubble from 1925 until his death in 1953. The house remained in the family until approximately 1973, when it was purchased by Mr. and Mrs. Robert Mollno, the present owners. The house continues to function as a single family residence.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	X SCIENCE
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE
__1600-1699	__ARCHITECTURE	__EDUCATION	__MILITARY	__SOCIAL/HUMANITARIAN
__1700-1799	__ART	__ENGINEERING	__MUSIC	__THEATER
__1800-1899	__COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	__TRANSPORTATION
X 1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)
		__INVENTION		

SPECIFIC DATES 1925-1953 ~~BUILDER~~/ARCHITECT Joseph Kucera

STATEMENT OF SIGNIFICANCE

Astronomy, the most ancient of sciences, found fertile soil in the United states. Throughout the 19th century American astronomers such as Nathaniel Bowditch, William Cranch Bond, Asaph Hall, and Edward Charles Pickering earned international recognition. During the first decades of this century the quality of American observatories and the men who worked in them made the United States a world leader in astronomy. Henrietta Leavitt, Henry Norris Russell, Harlow Shapley, and George Ellory Hale were among the astronomers whose discoveries between 1900 and 1925 transformed our understanding of the universe. Edwin Powell Hubble, the discoverer of extragalactic nebulae, also belonged to this elite group. "Edwin Powell Hubble," a colleague wrote, "by his inspired use of the largest telescope of his time, the 100 inch reflector of the Mt. Wilson observatory, revolutionized our knowledge of the size, structure, and properties of the universe. . . Indeed he advanced the astronomical horizon on the universe by steps relatively as large in his time as those taken by Galileo in his studies of the solar system and by the Herschels in their investigation of our own Milky Way stellar system."[1]

Life

Edwin Powell Hubble was born November 20, 1889, while his parents were visiting relatives in Marshfield, Missouri. He grew up in Wheaton, Illinois, where his father was an insurance executive. Hubble was one of nine children. His father, either from pedagogical conviction or simply to avoid family chaos, was a strong disciplinarian, a trait which Hubble fondly remembered.

After attending public schools Hubble in 1906 entered the University of Chicago. At Chicago he studied the liberal arts and excelled in sports. Indeed his boxing skills were such that Chicago cognoscenti of the manly art suggested he turn professional. After graduating from Chicago in 1910, Hubble spent three years in the United Kingdom as a Rhodes scholar. Although he would later become a world famous astronomer, Hubble at Queens College, Oxford, studied Roman and English law. In 1913 he returned to the United

[1] N.V. Myall, "Edwin Powell Hubble," National Academy of Sciences Biographical Memoirs, 41, (New York, 1970), p. 175.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Jaffee, Bernard. Men of Science in America (New York, 1956).
N.V. Myall. "Edwin Powell Hubble", National Academy of Sciences Biographical Memoirs, 41, (New York, 1970).
New York Times, September 28, 1953.
Charles A. Whitney. The Discovery of Our Galaxy, (New York, 1971).

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY less than one acre

UTM REFERENCES

	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
A	1,1	3,9,6,7,2,0	3,7,7,6,1,6,0	B			
C				D			

VERBAL BOUNDARY DESCRIPTION

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
James Sheire, Historian

ORGANIZATION
Historic Sites Survey, National Park Service

DATE
7/9/76

STREET & NUMBER
1100 L Street, N.W.

TELEPHONE
202-523-5464

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.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE

DATE

FOR NPS USE ONLY
I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

States and moved to Louisville, Kentucky, where he passed the bar examination and began practicing law. Hubble's period as a lawyer was very brief. He did not enjoy the work of a practicing attorney and in 1914 he returned to the University of Chicago to study for a PhD in astronomy. Hubble was an outstanding graduate student. Working with the 40 inch refracting telescope at the Yerkes Observatory, he quickly assimilated the knowledge and methodology of his new discipline. In 1917 Hubble received his PhD.

When Hubble graduated from Chicago, George Ellory Hale offered him a position at the Mt. Wilson Observatory in California. Hale, one of the country's foremost astronomers, was the guiding spirit behind the Carnegie Institution's construction of the Mt. Wilson facility. As of 1917 its 100 inch reflecting telescope was the finest astronomical instrument in the United States. To be selected for a position on the Mt. Wilson staff was an honor. Unfortunately, events prevented Hubble from accepting Hale's offer. In 1917 the United States entered World War I. Hubble immediately enlisted. Commissioned a captain in the 343rd Infantry, 86th Division, Hubble accompanied his outfit to France. In 1918, he was promoted to major. Hubble was wounded during the last days of the war in November 1918 and did not return to the United States until the summer of 1919. After his discharge Hubble proceeded to Pasadena, California, to resume his career in astronomy.

From 1919 to his death in 1953, the California Institute of Technology and the two observatories associated with the school, Mt. Wilson and Mt. Palomar, were Hubble's spiritual and intellectual home. During these years he made the major contributions to astronomy for which he is remembered. In addition, with George Ellory Hale, Hubble was a major actor in the conception and construction of the giant 200 inch Palomar reflecting telescope. Begun in 1938 and completed in 1948 after World War II, this telescope was the most powerful in the world. The Mt. Palomar Observatory with the 200 inch telescope and its companion 48 inch Schmidt telescope brought vast new areas of space within the reach of observational astronomy. When World War II began, Hubble again offered his services. From 1942 to 1945 he occupied an important position at the Aberdeen Ballistics Research Laboratory.

From the time he was young Hubble enjoyed physical exercise and outdoor recreation. In California he became a dedicated fisherman and hiker. Hubble was also active in community affairs and maintained a lively interest in contemporary political and social questions. He was a founder and active

member of the Los Angeles Committee on Foreign Relations. Among his many honors and awards were the Barnard Medal, the Bruce Gold Medal, the Franklin Gold Medal, and the Royal Astronomical Gold Medal. In 1949, while hiking Hubble suffered a heart attack. Four years later he was hit by a stroke and died September 28, 1953.

Work

Astronomy, like other physical sciences, is made up of numerous subdisciplines and draws on other physical sciences for its knowledge. Cosmology, astrophysics, and observational astronomy are examples of astronomy's subdisciplines. Edwin Powell Hubble conducted his research and made his most important discoveries in the area of observational astronomy, that field of astronomy which concentrates on describing the observable universe. Employing the most powerful and sophisticated telescopes of his time, Hubble made three major contributions to our knowledge of the universe. They were: one, proof that the universe is composed of nebulae or galaxies; two, Hubble's "tuning fork," a system for describing and classifying nebulae; and three, a theory based on empirical data that nebulae are receding. The latter discovery is known as "Hubble's constant."

When Hubble returned from World War I to join George Ellory Hale at the Mt. Wilson Observatory, he took up the research on nebulae which he had pursued at the Yerkes Observatory and which was the subject of his PhD thesis, "Photographic Investigations of Faint Nebulae" (1920). In 1922, in a major paper entitled "A General Study of Diffuse Galactic Nebulae," Hubble asserted that the universe is populated by countless nebulae or individual galaxies of which our own galaxy, the Milky Way, is only one. According to the astronomer N. V. Myall, this paper " . . . laid the cornerstone upon which rest many contemporary theories of the nature of galactic nebulae," and,". . . it paved the way to a piercing analysis of both the distribution of galactic nebulae and the origin of their luminosity."[2]

In 1925 Hubble followed this paper with another titled, "NG C 6822, a Remote Stellar System." In this paper Hubble outlined a methodology for measuring distances from the earth to nebulae, i.e. he discovered a means for exploring nebulae. In making his discovery of what he called extragalactic nebulae and in measuring their distances Hubble relied on the previous discoveries of Henrietta Leavitt and Harlow Shapley. In 1912, Ms. Leavitt developed her "period-luminosity law" for measuring distances to variable stars,

[2]Ibid., p. 189.

Harlow Shapley applied Leavitt's period-luminosity law to a particular type of stars called cepheids (a pulsating star with regular changes in brightness) and measured cephid distances in our galaxy. Employing the powerful 100 inch Mt. Wilson telescope, Hubble in turn resolved cephids in distant nebulae. In measuring their distances he concluded that the cephids and the nebulae to which they belonged must be outside our own Milky Way stellar system. (Hubble also applied other secondary distance criteria such as total luminosities of nebulae in his deductions, but the period-luminosity law as applied to cephids was his central measuring technique).

In 1926, Hubble published "A Spiral Nebula as a Stellar System: Messier 33." According to Myall, the paper was "epoch making."[3] In a chapter headed "Extra-Galactic Nebulae" Hubble outlined a system for classifying nebulae. According to Hubble the vast majority of nebulae can be classified according to their shape. He devised what came to be known as "Hubble's tuning fork." The fork's handle consisted of the elliptical nebulae. On one prong of the fork Hubble located the spiral shaped nebulae (one of which is the Milky Way) and on the other he arranged the barred spiral nebulae. Hubble called the relatively small group of nebulae that do not have an elliptical, spiral, or barred spiral shape simply irregular. To this day Hubble's tuning fork is the basic system astronomers employ for classifying the hundred of millions of nebulae in the universe ranging out to an observable distance of 5,000,000,000 light years.

Hubble's next major contribution to astronomy came in 1931 when with Milton L. Humason he published "The Velocity Distance Relation among Extra-Galactic Nebulae." In this paper Hubble and Humason contended that nebulae were moving away from each other at a velocity that increases in proportion to the distance between them (in technical terms: +500 km/sec per million parsecs of distance). This conclusion was followed in 1934 by "Red Shifts in the Spectra of Nebulae." Here Hubble claimed that the shift in the spectra of nebulae to the red indicated that nebulae were receding from the observer at ever increasing velocity. Hubble's thesis that the red shift in the spectra of nebulae indicated recession is today known as "Hubble's Law" or Hubble's constant."

In 1936, Hubble published The Realm of Nebulae. The book summarized the results of his research. It was immediately hailed as a classic in astronomy and is still read today (a new edition was published in 1958).

Edwin Powell Hubble was an observational astronomer. Using the 100 inch Mt. Wilson reflecting telescope and later the 200 inch Mt. Palomar instrument

[3] Ibid., p. 193.

he described what he saw. He saw that the universe is populated by millions upon millions of individual island universes, that these nebulae can be classified according to their shape, and that galaxies are moving away from each other and from an observer on earth. Although Hubble firmly believed that nature is guided by laws which science uncovers, he himself did not engage in cosmological theorizing. The results of his research, however, had a major impact on cosmology. His observation that the extragalactic nebulae are moving away from each other lies at the heart of the "big bang" theory of the creation of the universe. His contention that the velocity of recession increases as distance increases implied that it is possible that galaxies have reached the speed of light and have thus passed into a realm from which their light can never reach the earth. Hubble's research, in short, not only produced remarkable data about the universe but it also stimulated whole new questions pertaining to the nature of the cosmos. "Hubble would have been a great astronomer in any age," Charles H. Whitney writes, "that he chose to explore the realm of the nebulae and that he accomplished so much are signs not only of his talents for research but also of his wisdom in choosing a field in which a number of important problems were opening up. Hubble's published papers are among the most important in astronomy. They are written with a clear sense of history; they draw on a wide variety of facts; they refrain from speculation beyond a bare minimum. Even after twenty years, they are worth careful reading."[4]

In 1953,a few months before his death, Hubble traveled to London to give a lecture. Looking back, the discoverer of galaxies eloquently defined his relationship to the discipline to which he had devoted his creative talents. "For I can end as I began," he reflected. "From our home on Earth, we look out into the distances and strive to imagine the sort of world into which we are born. Today we have reached far out into space. Our immediate neighborhood we know rather intimately. But with increasing distance our knowledge fades, and fades rapidly, until at the last dim horizon we search among ghostly errors of observation for landmarks that are scarcely more substantial. The search will continue. The urge is older than history. It is not satisfied and it will not be suppressed."[5]

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[4]Charles A. Whitney, The Discovery of Our Galaxy, (New York, 1971), p. 241.

[5]As quoted in Myall, p. 207.