

LOWELL OBSERVATORY, SLIPPER BUILDING
1400 W. Mars Hill Road
Flagstaff
Coconino County
Arizona

HABS NO. AZ-206-A

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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Historic American Building Survey
National Park Service
Department of the Interior
P.O. Box 37127
Washington, DC 20013-7127

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HISTORIC AMERICAN BUILDINGS SURVEY
~~LOWELL OBSERVATORY, ADMINISTRATION BUILDING~~
~~(Slipher Building)~~

HABS No. AZ-206-A

Location: Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, Coconino County, Arizona. The Administration Building is centrally located on the Observatory site. The site is L-shaped, with the point facing northwest. The building is located at the point of the "L" and is situated on an east-west axis with the front entrance doors facing south.

Present Owner: Percival Lowell Estate, Lowell Observatory.

Present Use: The Administration Building is used as office space for the staff of the Lowell Observatory.

Significance: The Administration Building is the central building of the Lowell Observatory complex. The building was erected in 1915-16 under the direction of Stanley Sykes and Edward C. Mills to supply badly needed office and darkroom space. Constructed of local materials, its predominant feature is the huge, Saturn shaped rotunda at center front. Eventually, the rotunda would serve as a library, and later, a visitor center. This was the last building Percival Lowell saw constructed at the Lowell Observatory before his death in 1916.

PART I. HISTORICAL INFORMATION:

A. Physical History:

1. Date of Erection: While this building was in the planning stages for several years, work did not actually begin until the summer of 1915. Letters written between V. M. Slipher and Percival Lowell from the summer of 1915 through the following year detail the work schedule for the building. The building was completed sometime in 1916 (exact date unknown), however six years later, in 1923, a second story with an attic and a hipped roof was added to the building to add additional office space and combat roof leakage.

SLIPHER
LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 2)

2. Architect: While one source credits Percival Lowell's cousin, Boston architect Guy Lowell, with designing the building, it is more likely that Percival Lowell and his wife Constance designed the building themselves. Constance Keith Lowell had a background in the renovation of houses and was engaged in this activity in Boston when she married Percival.² Letters in the Observatory archives credit Constance with providing exterior elevation drawings for the benefit of the workmen. Constance also designed interior details, specifically the large Arts and Crafts fireplace in the rotunda.³

3. Original and subsequent owners, occupants, uses: The Administration Building has been part of the Lowell Observatory complex since its construction in 1916. It has been used by the Lowell Observatory staff as office and work space. The basement included important darkroom space, and in 1957, the rotunda was used to house the library. Later, the rotunda would be used as a visitor center. The second story, added in 1923, provided additional office space and the second floor of the east wing once served as temporary housing for guests or staff members in need. More recently, the far end of the west wing has been used as a temporary staff apartment. The attic, created with the 1923 addition, provided storage space.⁴

4. Builder, contractor, suppliers: The Administration Building was constructed under the direction of Stanley Sykes and Edward C. Mills, both Observatory handymen and long-time employees.⁵ Mills was a skilled cabinetmaker, and a footnote on a photograph of the rotunda staircases after the building was completed credits Mills with the building's woodwork.⁶ The lumber was probably supplied locally, likely by the Arizona Lumber and Timber Company (A. L. & T. Co.). The owner of the A. L. and T. Co. had been a friend of the Observatory since 1894.⁷ This company also supplied lumber for the Pluto telescope dome that would be built in 1929.⁸

Constance Lowell, Percival Lowell's wife, was responsible for some of the interior details. She designed the large arts and crafts fireplace on the north wall, and she ordered the large saturn-shaped art glass chandelier from the National Fixture and Light Company of Los Angeles, California.⁹

SLIPHER
LOWELL OBSERVATORY, ~~ADMINISTRATION~~ BLDG.
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 3)

The large vault in the west end of the basement still bears its manufacturer's name. It was made by the Herring-Hall-Marvin Safe Company of Hamilton, Ohio.

5. Original plans and construction: While William Lowell Putnam suggests that Guy Lowell was hired by his third cousin, Percival Lowell, to design the Observatory's new Administration Building, letters in the Observatory archives suggest that Percival and his wife Constance did the design work themselves. Interestingly, in the correspondence between Lowell and V. M. Slipher in 1915 and 1916, a number of specific details were discussed and drawings produced. However, the completed building differs greatly from the discussed plans and drawings.

A set of 1916 blueprints from a California engineering firm most closely resembles the building in its completed form. The drawings show a linear building with full basement and first floor, a flat roof with castle-like parapets, and large, domed rotunda at center front. The rotunda included eight Doric columns evenly spaced around the perimeter, with french doors and a set of windows between each of the columns. The dome was intended to resemble Saturn, and where the rings would be, the plans called for a narrow balustrade.¹⁰

The correspondence and the drawings provided by Constance Lowell called for a hipped roof on the rear wings, and fanlights over the rotunda's french doors. Further, instead of the existing full veneer of randomly laid volcanic rock on the exterior, the rock veneer was only to go a short distance up the wall, giving the impression of stone foundations.¹¹

The completed building even differed from the blueprints in a few places. The most prominent difference is that the plans called for a large stair landing with steps at the east and west ends off the first floor center room behind the rotunda. This large stair landing does not appear to have been built. Instead, the proposed doorway was moved slightly east, and a small, plain, single set of wooden stairs was built instead. In addition, the proposed balustrade around the dome was never built, and there were a few minor changes in the placement of interior doorways.

SLIPHER
LOWELL OBSERVATORY, -ADMINISTRATION BLDG.
(Slipher Building)
HABS NO. AZ-206-A (page 4)

6. Alterations and additions:

1923: A full second floor, with a hipped roof and attic were added by Stanley Sykes and E.C. Mills in 1923. The building's original flat roof leaked so badly due to winter snows that a steeply pitched roof was necessary. The second floor provided extra office space, a large, central meeting room, and temporary housing in the west wing for visitors and needy staff members. The roof was built with a steep enough pitch to allow a person to stand in the attic. A single small room was constructed in the attic at the center of the north face, with windows opening to the north. It is unclear what this room was originally used for, but now it and the rest of the attic serve as storage space.

The original first floor porch in the north-east corner was filled in and stuccoed. It is possible that this alteration was also done in 1923 as the windows that were placed in the stuccoed section were "craftsman" style, double hung sash with multiple lights on top over one large bottom light..

1988: A wood gabled entry roof with metal columns was constructed over the south facing central door on the west wing. This entry was built in 1988 by Observatory maintenance man Gerald McGlothlin to protect the doorway and stoop from the large icicles that form there in winter.¹²

B. Historical Context:

By 1916, the Lowell Observatory had been accumulating research data for more than twenty years. Percival Lowell's Mars research had brought about thousands of drawings of the planet.¹³ His search for "Planet X," a theorized planet beyond Neptune, required a multitude of complex calculations.¹⁴ Vesto M. Slipher's work with spiral nebulae and Carl O. Lampland's work with planetary and stellar photography produced hundreds of photographic plates. With astronomers living in separate quarters and storing data in their own work spaces, accessing material must have been difficult.¹⁵ By 1916 it must have been readily apparent that some sort of administrative structure was necessary at the Observatory to store all of the accumulated data in one place.

SLIPHER

LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 5)

Regular references to such a building began in July 1915 in letters between Vesto M. Slipher, Lowell astronomer, and Percival Lowell, who was then in Boston. According to the dialog, it is apparent that a discussion of constructing a new building had been going on for some time. The proposed building was to be rectangular with a large, domed rotunda at center front. In a July 15 letter, Slipher briefly described the building:

As I remember at our last discussion of the plans (in Mr. Lampland's study) you had in mind the circular front part 40 feet in diameter, rectangular part containing work rooms etc. just north standing long way east and west; --the circular part to extend some distance into the rectangular one. . . The excavating is being done now on the rectangle 36 by 100 and for the 40' circle midway on the front.¹⁶

In his book The Explorers of Mars Hill, William Lowell Putnam notes that Percival Lowell commissioned his third cousin, Guy Lowell, to design the proposed administration building.¹⁷ While this would have been a logical thing for Percival to do, there is no evidence to suggest that this was the case. Guy Lowell had been trained as an architect and practiced in Boston. Among his works are the Boston Museum of Fine Arts, the New York County Courthouse in Manhattan, and the Quadrangle at Radcliffe College. After Percival's death in 1916, Guy Lowell became the Observatory's trustee.¹⁸ While there is a great deal of correspondence between Guy Lowell, Percival, and other employees of the Observatory, none of the correspondence mentions the administration building. Further, there is no mention of Guy Lowell on a set of 1916 blueprints of the administration building. Only the name of an engineering firm from Los Angeles, California, appears in a lower corner.¹⁹

Based on the correspondence between Percival Lowell and V. M. Slipher between 1915 and 1916, it seems more likely that Percival Lowell and his wife Constance designed the building with the help of a few suggestions from Slipher and C. O. Lampland. Constance, perhaps, had the greatest influence in the project as prior to her marriage to Percival, she had spent time renovating houses in Boston. She had spent considerable time in England and become fond of English houses. Upon returning to the United States, she purchased several houses in Boston's Beacon Hill neighborhood and hired a team of assistants to do renovations.²⁰ Constance used her experience with architecture to supply V. M.

~~SLIPHER~~
LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 6)

Slipher with drawings of the proposed Administration Building.²¹ She was also responsible for designing the rotunda's arts and crafts style fireplace.

The administration building was clearly to be a focal point for the Observatory. The building was to be built "astronomically . . . in line with the equinoctial sunrise."²² It was to be set north and west of the 24-inch Clark telescope dome, and just west of the Lowell's home on the hill, known as the "baronial mansion." How the building would look from the baronial mansion was of some concern, and number of Slipher's letters make note of the potential view.

Also of concern to Lowell was the view from inside the building, especially in his own office space in the southeast "sunrise corner." In a telegram to Slipher on December 20, 1915, Lowell wrote:

Ignore last telegram. Make study window opposite library six feet wide flanked by narrow side windows and top high enough for outlook from library same. My studio windows generally high enough at top for best seeing.²³

In the archives of the Observatory are a set of blueprints for the administration building done by George Harding, Engineer, of Los Angeles, California, and a separate drawing of the front elevation, probably done by Mrs. Constance Lowell. The drawing and the blueprints are quite different in detail. While the actual building resembles the set of blueprints, the letters describing the Lowells' preferences are much closer to the elevation drawing. The most striking differences between the blueprints and the drawing are in the roof line and the window selection. The blueprints show a flat roof on the rectangular wing and square, craftsman style windows on the rotunda. The drawing shows a hipped roof with eyebrow windows and fanlights over french doors in the rotunda. Why the completed building resembled the blueprints and not the Lowell's preferences as in the drawing and letters is unclear. Since money had been a concern in the construction of other buildings at the Observatory, it is possible that cost overruns kept the administration building from being built expressly according to the Lowell's wishes.

Work was started on the administration building in July of 1915.²⁴ As the work continued, V. M. Slipher sent a steady stream of letters and photographs of the building in

SLIPHER

LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(Slipher-Building)
HABS NO. AZ-206-A (page 7)

progress to Lowell in Boston. Slipher wanted to make sure that everything was going according to the Lowell's specifications:

Certainly I have had no desire to assume any unnecessary responsibility and the unfortunate situation is rather the result of my trying to keep the work going without seeing impatient for the plans and bothering you unnecessarily with details. From now on working drawings will be made for the workmen and these will be sent you for your OK. This will relieve me of the anxiety lest something be misunderstood and done in a way you did not intend and thus mar the building.²⁵

Slipher's letters to Lowell often contained specific questions and concerns. For example, in August 1915, Slipher wrote:

From Mrs. Lowell's elevation view of the building I infer that the foundation showing above ground is to be of rough stone but that the walls above the main floor are to be differently constructed? I thought these walls were all to be of the moss covered stone, but it is clear that the smooth walls from main floor up will look much better with the smooth dome. What is the surface of those walls to be?²⁶

On December 15, 1915, Slipher wrote that "work on walls of the rectangle is underway." In the same letter, he noted that the workmen were waiting to begin work on the "cella," or rotunda, until they received Lowell's instructions on the windows.²⁷ A few days later, on December 20, Lowell telegraphed his window design specifications, "Front door library double twelve feet wide. Windows four feet wide down to floor nine and a half high topped by semicircular fan."²⁸

Surrounding the rotunda on the exterior are eight, large, Doric columns. Between each of the columns is a set of french doors, with a pair of three-over-three light casement windows over each. In a November 13, 1915 letter to V. M. Slipher, Lowell outlined his design preferences for the rotunda exterior:

The one I want is with the pillars snug to the cella supporting the coping of the dome, the cella itself supporting the dome. This gives you for the iron ribs of the latter about what I told you, 42 ft. The pillars should be 18 inches at the base to look well,

~~SLIPHER~~
LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(Slipher Building)
HABS NO. AZ-206-A (page 8)

as near as I can visualize them, tapering duly to the top; their bases about 2 ft. square. The windows in the dome [with] sashes [sic] rolling up into one with a pointed top swinging on hinges.²⁹

Although Slipher at one point recommended that the columns could be made out of wood, in the end, they and all the window sills and lintels were made of concrete. A railing, similar to a balustrade, was intended to run around the lower edge of the dome with a small balcony right over the south facing main entrance doors. Slipher also recommended making these of wood as concrete would be too heavy.³⁰ However, both the balcony and balustrade were left off entirely.

A number of questions arose in regards to the dome, the building's most prominent feature. Initially, the plans called for an elaborate iron framing system. The Observatory solicited several bids from various iron and steel companies but the iron frame idea was abandoned in favor of wood framing.³¹ Large, wooden ribs were covered with narrow wood strips, and finally, a layer of thin metal sheets completed the dome. According to William Putnam, the metal sheets were soldered together, and they leaked for many years.³²

The letters between Slipher and Lowell were not limited to discussions of architectural detail. Technical systems in the new building were an important topic of discussion as well. In the usual pattern of providing Lowell with an update on construction and then asking related questions, Slipher wrote to Lowell on August 28, 1915:

Please find herein various photographs taken in connection with the new building in order that you can see how it is going to fit in with things generally, how the chimney of the fire-place and that of the suggested heating plant will appear or rather hardly appear at all. . . . If you could give us your wishes by wire as to the "workroom entrance" against the east side of dome and the question of locating the heating plant underground against the north wall of the rectangle we could then get the masons to work building the wall from the ground up to the main floor level.³³

In regards to "hiding the chimneys," the building was designed well. The three chimneys are all but invisible from the front of the building.

~~SLIPHER~~
LOWELL OBSERVATORY, ADMINISTRATION BLDG.
~~(Slipher Building)~~
HABS NO. AZ-206-A (page 9)

The administration building was constructed with a steam heating system. Throughout the building are radiators in various sized and shapes ranging from the plain, narrow, wall mounted radiator in the "workroom entrance," to the large, decorative radiators between the windows in the rotunda. Lowell commented on the placement of these radiators in a November 13, 1915 letter:

In answer to the radiators: they are good but should be put, not in front of the windows in the circular dome, but between them or else there should be spiring ones up by the side of the windows. Better still though more expensive is the heating by a box of tubes just under the floor opening into the latter. I think the simplest way is to have such as you pictured ones between the windows under the books as narrow seats, unless you think the heat might warp the volumes.³⁴

By the end of 1916, the new administration building was nearing completion. Unfortunately, Percival Lowell did not live to see it finished. He passed away in November of that year.³⁵ The rest of the staff pushed on to complete the building, and Percival's wife Constance did her part to add to the decor of the rotunda. Already inside the rotunda were a pair of wooden spiral staircases leading to a narrow balcony that ran almost completely around the inside of the dome. The staircases, like the rest of the woodwork in the building, were the work of E. C. Mills, a cabinetmaker from Canada and a Lowell handyman.³⁶ Next to the north door was a large "Arts and Crafts" style concrete fireplace with massive black andirons designed by Constance Lowell.³⁷ Percival had forwarded the plans for this fireplace to Slipher in July 1916. To these features, Constance added a large light to be suspended from the center of the dome. This light, ordered from the National Fixture and Light Company of Los Angeles, California, was shipped to the Observatory in June 1918.³⁸ Done in shades of orange and yellow and shaped like the planet Saturn, the light is an excellent example of "Art Glass."

The finished building was a long, rectangular single-story hall, with the huge, domed rotunda dominant at center front. The roof of the rectangular section was flat, and the exterior walls were topped with parapets, like a castle. The outer walls were completely covered with local malpais volcanic rock laid randomly. While the building is hard to characterize stylistically, it does have elements of the Craftsman style. The heavy wood paneled doors, with top

~~LOWELL OBSERVATORY, ADMINISTRATION BLDG.~~
~~(Slipher Building)~~
HABS NO. AZ-206-A (page 10)

panels of windows are typical of the Craftsman style, as are the double hung sash windows with multiple lights on top. The north east and north west corner porches featured exposed rafters and heavy, short piers with columns at the corners. The use of rough stone, like the administration building's face of volcanic rock, is also common in the Craftsman style.

In 1917 the Observatory staff members were able to move into their new office spaces. Offices and sitting rooms were furnished with large pieces of mission oak furniture. Books were moved into the rotunda area. A darkroom was ready for use in the basement. A fireproof vault was installed in the far west end of the basement to protect valuable research materials.

Six years later, in 1923, the administration building received a major addition. A second story, an attic, and a steeply pitched roof were added to the building. It was found that the original flat roof leaked badly, probably due to Flagstaff's winter snows. The hipped roof solved the leakage problem, and the second story gave additional office space, meeting space, and living space. The second floor west wing was used for a time as temporary housing for Observatory staff in need.³⁹

Except for the 1988 addition of a wooden gable roofed portico over the business entrance door on the west side of the south face, the building retains its 1923 form.⁴⁰ The building has been continually used to as office space for Lowell Observatory personnel since 1917. The rotunda housed the Observatory library in 1957, and later served as a visitors center. In 1989, the administration building was officially renamed the "Slipher Building," in honor of V. M. Slipher and his brother Earl C. Slipher, Lowell astronomers since the first decade of the twentieth century.⁴¹

PART II: ARCHITECTURAL INFORMATION

A. General statement:

1. Architectural character: The Administration Building was built in 1914 in response to a need for office space. Like the other buildings at the Observatory, the Administration Building does not conform to any traditional architectural style. It does, however, exhibit elements of the Craftsman style, especially in the interior woodwork, window style, and exposed rafters on the north facing corner porches.

Slipher
LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(~~Slipher~~ Building)
HABS NO. AZ-206-A (page 11)

The building is faced with Malpais volcanic rock, an exterior treatment that would become popular in Flagstaff in subsequent years. The most prominent feature of the structure is the large domed rotunda-- designed by Lowell and his wife Constance to resemble Saturn and its rings. The rotunda once housed a library, then a visitors center. Most of the building is devoted to office space.

2. Condition: The building is in fair condition.

B. Description of Exterior:

1. Overall dimensions: The Administration building is three-and-a-half stories and consists of a dominant, central domed rotunda flanked with wings. The rotunda has eight large Doric columns made of concrete around its circumference, with french doors and a transom window between the columns. The wings each have four bays, and no two windows are alike. The building originally included the basement and first floor. The second floor and attic were added in 1923. The rectangular wing section is 126' x 36' and the rotunda is 40' in diameter.

2. Foundations: The building foundations are concrete. Since the building is built into a hill, the south and west sides of the basement are banked while the east and north sides are exposed.

3. Walls: Randomly laid local malpais volcanic rock covers the building.

4. Structural system, framing: According to early photographs, the building has both wood frame and brick structural walls. Brick walls seem to support the dome. The dome itself has a set of wood frame arches covered with bands of thin wood laminate strips and topped with metal sheeting. The basement floor is concrete. The other floors are wood frame as are the roof supports.

5. Porches, stoops, balconies, porticoes, bulkheads: The south facing main rotunda entrance has a portico supported by two Doric columns over a set of double doors. Both of the wings have a centrally located front entry accessed by a set of stairs. The stairs on the east wing are made of concrete and hug the wall, then turn at a landing 90 degrees to ground level. The

~~SLIPHER~~
LOWELL OBSERVATORY, ~~ADMINISTRATION~~ BLDG.
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 12)

balustrade is wood painted white with square balusters. The south wall of the stairs is covered with field stone to match the building walls and there is a pre-cast concrete seat at the bottom of the south stair wall.

The west wing stairs are also concrete with the same white painted wood balustrade. This set of stairs is covered with a small wood porch with a gabled roof supported by white metal columns. This porch is a recent addition and does not appear in early photographs.

The north east corner of the building has a porch on both the first and second floors. The porches are square, and the first floor porch has a concrete floor with a concrete column in the corner. Around the perimeter of the porch are low stone walls with pre-cast concrete tops, with an opening at the center west side. Directly above is a screened in porch, having a low, shingled wall with screening above. The shingles and wood slats supporting the screen are painted dark green. There is a door to the upper porch on the north side. An outside open staircase made of wood runs from the door to the northwest corner of the building.

There was a matching porch on the first floor northeast corner of the building, but it has been enclosed with stuccoed walls to add more office space.

6. Chimneys: There are three chimneys, each tall, rectangular, and covered in malpais volcanic rock. One chimney is near the west end of the building, set in from the end ten to twelve feet. Another chimney is east of the center of the building on the south face, near the joining point of the dome and the wings. The dome hides this chimney from view. The third chimney is visible from the north side of the building, and is several feet east of center.

7. Openings:

a. Doors: The formal entrance is located at the south face of the rotunda and consists of a set of large vertical plank double doors. Between each of the columns on the rotunda is a set of French doors, each door with nine lights.

The west wing has three doors. The door near the

SLIPHER
LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(~~Slipher~~-Building)
HABS NO. AZ-206-A (page 13)

center of the south face is a six vertical-paneled wood door, the top three panels being made of glass. The doorway lintel is of pre-cast concrete. The door to the lower porch is in the southeast corner of the porch on the east wall. This door is also wood paneled and has a screen door as well. The final door is on the second floor screened porch at the top of the north outside stairs. This door is small, and is made of beaded wainscot.

The east wing has five doors. The door near the center of the south face is a six vertical-paneled wood door, with the top three panels being glass panes. At ground level in the corner between the rotunda and the south wall of the east wing is another door. This door, on the south wall, is paneled wood with six small square windows on top (three over three) and three rectangular vertical panels on bottom. This door also has a transom window above it. The doorway lintels of both of these doors are pre-cast concrete. There is a door in the ground with a small set of concrete steps up from it on the east end just south of center. This door has a large top panel and three horizontal bottom panels. Another door is in the northeast corner of the north side leading to the basement. This is a plain, modern interior door and is not original. The final door is just east of center on the north face. This door is also six vertical panels with the top three panels being glass panes. A set of wood stairs with plain square balusters built on the outside of the building leads to the door.

b. Windows: Above each french door on the rotunda is a pair of six-over-six light casement windows. Above the main entrance doors is a band of four windows, each with three-over-three lights.

On the east and west wings, the first-floor windows seem to be all double-hung sash windows while the second-floor windows are casement. Very few of the windows are the same. There are also a number of basement windows, most of which are visible on the lower end of the north face. (For detailed placement and sizes of windows see drawing/photographs).

SLIPPER
LOWELL OBSERVATORY, ~~ADMINISTRATION~~ BLDG.
(~~Slipher~~ Building)
HABS NO. AZ-206-A (page 14)

8. Roof:

a. Shape, covering: The rotunda has a domed roof and its construction materials are described in the structure and framing section. The two side wings have hipped roofs covered with asphalt shingles.

b. Cornice, eaves: The eaves on both wings and the "ring" around the Saturn shaped rotunda dome are made of narrow strips of wood painted white. On the northwest corner first floor porch, the eaves have exposed rafters.

c. Dormers, cupolas, towers: On the ends of the east and west wings are two large dormers with gabled roofs. Each dormer has a set of three "Palladian" style windows.

C. Description of Interior:

1. Floor plans: Each of the three floors has a long, central hallway running east to west with offices and work-spaces flanking both sides of the hall. At the center of the building north of the rotunda, on the first floor is a large open reading room with large north facing picture windows. A similar room occupies the same spot on the second floor and is used as a meeting room and additional office space. At the west end of the second floor is a private apartment occupied by Observatory staff members. The attic is unfurnished and is used for storage space. However at the center of the north wall is a partially completed room. The rotunda is simply a large, round room, used as a museum/visitor center.

2. Stairways: There are three sets of stairs in the Administration building. Two are in the west wing and the other is in the east wing. The east wing stairs are the main set of stairs, located just east of the rotunda on the south side of that wing. This staircase runs from the basement to the attic and has landings on the first floor, second floor, between the floors, and at ground level. The "workman's entrance" door immediately east of the rotunda opens in to this ground level landing.

The staircases in the west wing are smaller than the one in the east wing. One set goes from the first

~~SLIPPER~~
LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(Slipher Building)
HABS NO. AZ-206-A (page 15)

floor to the basement, beginning just west of the rotunda's north doors, curving to the shape of the rotunda, then turning north 90 degrees at a small landing to the basement floor. The other set of west wing stairs is a tiny set just east of the rotunda on the south side of the building which connects the attic and second floor. This set of stairs and the second floor to attic section of the east stairs are both made of unfinished wood.

The rest of the east stairs and the west wing first floor to basement stairs are dark brown stained and varnished wood, with square balusters and plain, square end posts.

Inside the rotunda are two sets of wooden spiral stairs leading to a narrow balcony housing bookshelves. One staircase is just west of the interior (north side) rotunda entrance doors. The other set is closer to the east side of the rotunda.

3. Flooring: The basement floors are concrete. The first floor is covered with commercial carpeting. The second floor has 4" wide pine plank floors, painted gray, with boards running east/west. The attic also has wood plank flooring, boards running east/west, but with no finish. The rotunda has commercial carpeting.

4. Wall and ceiling finish: Walls and ceilings throughout the building are rough plaster painted white. Basement walls are concrete with some made of lath and plaster.

5. Openings:

a. Doors: First floor interior office doors are stained, varnished, cross-paneled wood. Each door has a transom window at its top. Door frames are plain. The second floor office doors are varnished wood with five horizontal panels. The door to the attic in the west wing resembles the other second floor doors but is slightly wider.

b. Window frames are also plain. Picture windows in each of the center rooms provide ample light for that room only. The halls are quite dark.

6. Decorative features and trim: The rotunda contains a number of decorative features including a stone

~~SLIPHER~~
LOWELL OBSERVATORY, ~~ADMINISTRATION~~ BLDG.
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 16)

fireplace, spiral staircases previously described, a wood balcony, and a Saturn shaped light fixture suspended from the center of the dome.

The fireplace, placed east of the north in against the rotunda wall. It has fan carvings inside and a brass plaque over the top with a quote from Percival Lowell's will that states, "The balance of the net income shall be used for carrying on the study of astronomy especially the study of our solar system and its evolution at my observatory at Flagstaff, Arizona, and at such other places as may from time to time be convenient." There is a stone and brass sundial on a shelf on the left side of the fireplace and an elaborate pair of iron andirons inside.

The balcony is approximately 2-1/2' to 3' wide and runs around three quarters of the rotunda circumference. It is made of wood, stained brown, with square balusters and a plain rail. Underneath for decoration and support are triangular "Bungalow" style brackets.

The Saturn light fixture is made of stained glass in yellows, oranges, and whites. It is suspended from a long chain below a circular opening in the dome that once held a skylight.

7. Hardware: Door and window hardware in this building is plain. Office doors have rectangular plates and round metal doorknobs. Some of the smaller casement windows, notably the one on the landing between the first and second floors, has a hook and loop latch.

8. Mechanical equipment:

a. Heating and air conditioning: A number of original radiators exist in the building. The rotunda has five of them, situated between french doors. Two are included in the "reading room," the open room in the center of the first floor. A narrow radiator painted red is on the east wall in the stair landing between the basement and first floor. Another narrow radiator is located on the west wall in the center room on the second floor. A modern furnace is located behind a door on the second floor east wing.

b. Lighting: The Saturn light fixture in the

rotunda is one of the few remaining original light fixtures. Push button switch plates are still in use in the rotunda. The other original lighting device is a floor lamp, mission oak style, with a hexagonal lamp shade showing views of a planet, possibly Mars. This lamp once stood in the rotunda library and now is located in the first floor "reading room."

c. Plumbing: Water had been an early problem of the observatory. Water towers and holding tanks were built on site to alleviate this problem. This is discussed further in the overview of the site.

In the administration building there are at least two hot water heaters, one in the basement, near the center north side, and the other is in a second floor bathroom on the east wing. The clawfoot bathtub in this second floor bathroom appears to be original. The sink may be as well, though the toilet appears to be more recent. In the basement, just east of the west set of stairs is a sink that also appears to be original to the building. In addition, there are two rest rooms on the first floor, one near the east stairs and the other nearer the east end of the building, both with more modern bathroom fixtures.

9. Original furnishings: There are many pieces of original furniture still in use in this building. The reading room on the first floor contains two mission oak rocking chairs, another mission arm chair, and a mission style sofa. Some of the chairs have original leather upholstery. Original bookcases separate the reading room from the hall traffic and these are filled with old books. On the west wall of the reading room is a ca. 1900 china hutch housing observatory memorabilia including photographic equipment, a stereoscope, gyroscope, and planetary models. A similar hutch is in the rotunda near the south entrance doors. The rotunda currently has a number of display cases holding astronomy equipment, including the 1901 Brashear spectrograph, Percival Lowell's 6-inch telescope, and the blink-comparator used in the discovery of Pluto. Near the north rotunda doors in the hallway are a mission style desk and chair with gothic overtones. Percival Lowell is seen seated in this chair in a 1905 photograph taken inside the Clark

telescope dome. Next to the desk is a tall case clock with the words "Lowell Observatory" printed on it. In addition, a number of the offices contain original bookcases and cupboards. Basement storage areas also utilize original bookcases and shelving units.

PART III. SOURCES OF INFORMATION

A. Architectural Drawings: There is a set of blueprints for the Administration Building showing the front elevation, floor plan, and structural systems. These blueprints depict the building as it appeared before the second story addition in 1923. The engineering firm of George Harding, Los Angeles, California, drew up the blueprints. These drawings are uncataloged and are currently being stored in the attic of the Lowell Observatory Administration Building.

B. Early Views: There is a photograph of a drawing of the Administration Building, front elevation, ca. 1915. This drawing does not depict the structure as built, but seems to be a design sketch. While it is not signed or otherwise identified, this drawing was likely done by Mrs. Constance Lowell, as it strongly resembles a drawing by Mrs. Lowell as described by V.M. Slipher in an August 25, 1915 letter to Percival Lowell. This photograph is uncataloged, and is being stored in the attic of the Lowell Observatory Administration Building.

An extensive set of photographs exists showing the construction of the Administration Building from ground breaking to completion. The photographs are cataloged, and are contained in photo album number 3. This set of photographs is located in the photographic archives of the Lowell Observatory, in the basement vault of the Administration Building.

C. Interviews:

Gerald McGlothlin, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, Arizona. Observatory Grounds keeper.

D. Bibliography:

Cline, Platt. Mountain Town: Flagstaff's First Century. Flagstaff, Arizona: Northland Publishing, 1994.

Hoyt, William Graves. Lowell and Mars. Tucson: The University of Arizona Press, 1976.

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LOWELL OBSERVATORY, ADMINISTRATION BLDG.
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 19)

Letters of Constance Lowell, 1915-1917. Archives, Lowell Observatory, Flagstaff, Arizona.

Letters of Percival Lowell, 1915-1916. Archives, Lowell Observatory, Flagstaff, Arizona.

Letters of Vesto Melvin Slipher, 1915-1917. Archives, Lowell Observatory, Flagstaff, Arizona.

Lowell Observatory Correspondence, 1915-1916. Archives, Lowell Observatory, Flagstaff, Arizona.

". . . But Few Intimates in Boston Knew Of Intention To Marry." The Boston Herald. 11 June 1908. n. pg. Photocopy.

McAlester, Virginia, and Lee McAlester. A Field Guide to American Houses. New York: Alfred A. Knopf, 1992.

Putnam, William Lowell. The Explorers of Mars Hill: A Centennial History of Lowell Observatory. West Kennebunk, Maine: Phoenix Publishing, 1994.

PART IV. PROJECT INFORMATION

The Lowell Observatory Recording Project was sponsored by the Arizona State Historic Preservation Office, Kenneth Travous, Executive Director, and Lowell Observatory, Robert Millis, Director. The documentation was undertaken by the Historic American Buildings Survey division of the National Park Service, Robert Kapsch, Chief, with Joseph Balachowski, Architect, and Catherine Lavoie, Historian, supervising. The project was completed in the summer of 1994 at Lowell Observatory, Flagstaff, Arizona. The recording team included Maggie Ross, team supervisor, Christina Radu, Schaeffer Somers, and Tom Hetrick, architect technicians, and Rebecca Jacobsen, historian. Rebecca Jacobsen conducted all research relating to the project and completed the historic structures reports, with Catherine Lavoie editing. Site photographs were taken by Rick Grogan.

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(~~Slipher~~ Building)
HABS NO. AZ-206-A (page 20)

Notes:

William Lowell Putnam, The Explorers of Mars Hill: A Centennial History of Lowell Observatory 1894-1994 (West Kennebunk, Maine: Phoenix Publishing, 1994), 141.

". . .But Few Intimates In Boston Knew of Intention To Marry," Boston Herald, 11 June 1908, photocopy of clipped column.

Vesto Melvin Slipher, letter to Constance Lowell, 7 August 1916. Archives, Lowell Observatory, Flagstaff, Arizona, Vesto Melvin Slipher letters.

Putnam, 141.

Vesto Melvin Slipher, letter to Percival Lowell, 8 August 1916. Archives, Lowell Observatory, Flagstaff, Arizona, Vesto Melvin Slipher letters.

Photographic collection, Archives, Administration Building Vault, Lowell Observatory, Flagstaff, Arizona.

Platt Cline, Mountain Town: Flagstaff's First Century (Flagstaff, Arizona: Northland Publishing, 1994), 60.

Vesto Melvin Slipher, letter to Roger Lowell Putnam, 30 September 1928, Archives, Lowell Observatory, Flagstaff, Arizona, Vesto Melvin Slipher letters.

Vesto Melvin Slipher, letter to Constance Lowell, 7 August 1916. Archives, Lowell Observatory, Flagstaff, Arizona, Vesto Melvin Slipher letters, and National Light and Fixture Company, Los Angeles, California, letter to Constance Lowell, 18 June 1918, Archives, Lowell Observatory, Flagstaff, Arizona, Constance Lowell letters.

Blueprints, Lowell Observatory Administration Building, floor plan and front elevation, George Harding, Engineer, Los Angeles, California, uncataloged papers, Archives, Lowell Observatory, Flagstaff, Arizona.

Administration Building front elevation drawing, uncataloged papers, Archives, Lowell Observatory, Flagstaff, Arizona. The item in the archives is a photograph of the original drawing. While the photograph shows no signature or other identification, the drawing strongly resembles the elevation drawing by Constance Lowell as described by V. M. Slipher in a 15 August 1927 letter to Percival Lowell.

Gerald McGlothlin, interview with the author, 1 July 1994.

William Graves Hoyt, Lowell and Mars (Tucson: University of Arizona Press, 1976), 63.

Ibid., 262-4.

Vesto Melvin Slipher, letter to Percival Lowell, 1 August 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Vesto Melvin Slipher, letter to Percival Lowell, 1 July 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Putnam, 141.

Putnam, 92-3.

Blueprints, Lowell Observatory Administration Building, floor plan and front elevation, George Harding, Engineer, Los Angeles, California, uncataloged papers, Archives, Lowell Observatory, Flagstaff, Arizona.

". . .But Few Intimates In Boston Knew of Intention To Marry," Boston Herald, 11 June 1908, photocopy of clipped column.

~~Slipher~~
LOWELL OBSERVATORY, ~~ADMINISTRATION BLDG.~~
(~~Slipher Building~~)
HABS NO. AZ-206-A (page 21)

Vesto Melvin Slipher, letter to Percival Lowell, 25 August 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Putnam, 141.

Percival Lowell, telegram to Vesto Melvin Slipher, 20 December 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Vesto Melvin Slipher, letter to Percival Lowell, 8 July 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Vesto Melvin Slipher, letter to Percival Lowell, 25 August 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Ibid.

Vesto Melvin Slipher, letter to Percival Lowell, 15 December 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Percival Lowell, telegram to Vesto Melvin Slipher, 25 August 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Percival Lowell, letter to Vesto Melvin Slipher, 13 November 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Vesto Melvin Slipher, letter to Percival Lowell, 20 May 1916, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

El Paso Bridge and Iron Company, letter to Lowell Observatory, 18 May 1916, Archives. Lowell Observatory, Flagstaff, Arizona, Observatory correspondence.

Putnam, 141.

Vesto Melvin Slipher, letter to Percival Lowell, 28 August 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Vesto Melvin Slipher, letter to Percival Lowell, 13 November 1915, Archives. Lowell Observatory, Flagstaff, Arizona, Percival Lowell letters.

Putnam, 86.

Photographic collection, Archives, Administration Building Vault, Lowell Observatory, Flagstaff, Arizona.

Vesto Melvin Slipher, letter to Constance Lowell, 7 August 1916. Archives, Lowell Observatory, Flagstaff, Arizona, Vesto Melvin Slipher letters.

National Light and Fixture Company, Los Angeles, California, letter to Constance Lowell, 18 June 1918, Archives, Lowell Observatory, Flagstaff, Arizona, Constance Lowell letters.

Putnam, 141.

Gerald McGlothlin, interview with the author, 1 July 1994.

Putnam, 146.

SLIPHER
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(Slipher Building)
HABS NO. AZ-206-A (page 22)



Figure #1 Photograph of Lowell Observatory Administration Building. Archives, Lowell Observatory, Flagstaff, Arizona, 1917.

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(Slipher Building)
HABS NO. AZ-206-A (page 23)

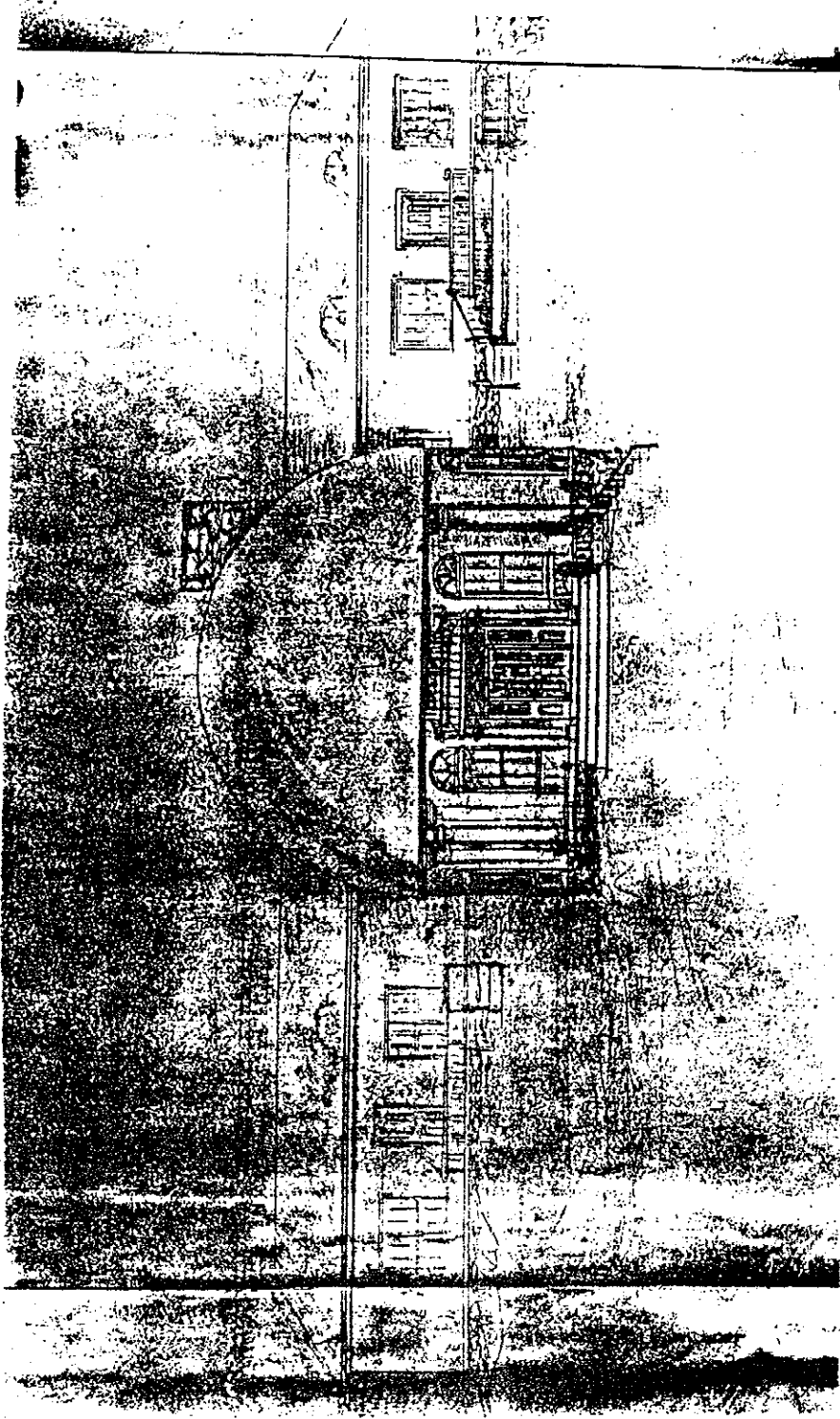


Figure #2 Photograph of design sketch, Lowell Observatory Administration Building, probably by Mrs. Constance Lowell. Archives, Lowell Observatory, Flagstaff, Arizona, 1915.

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(Slipher Building)
HABS NO. AZ-206-A (page 24)

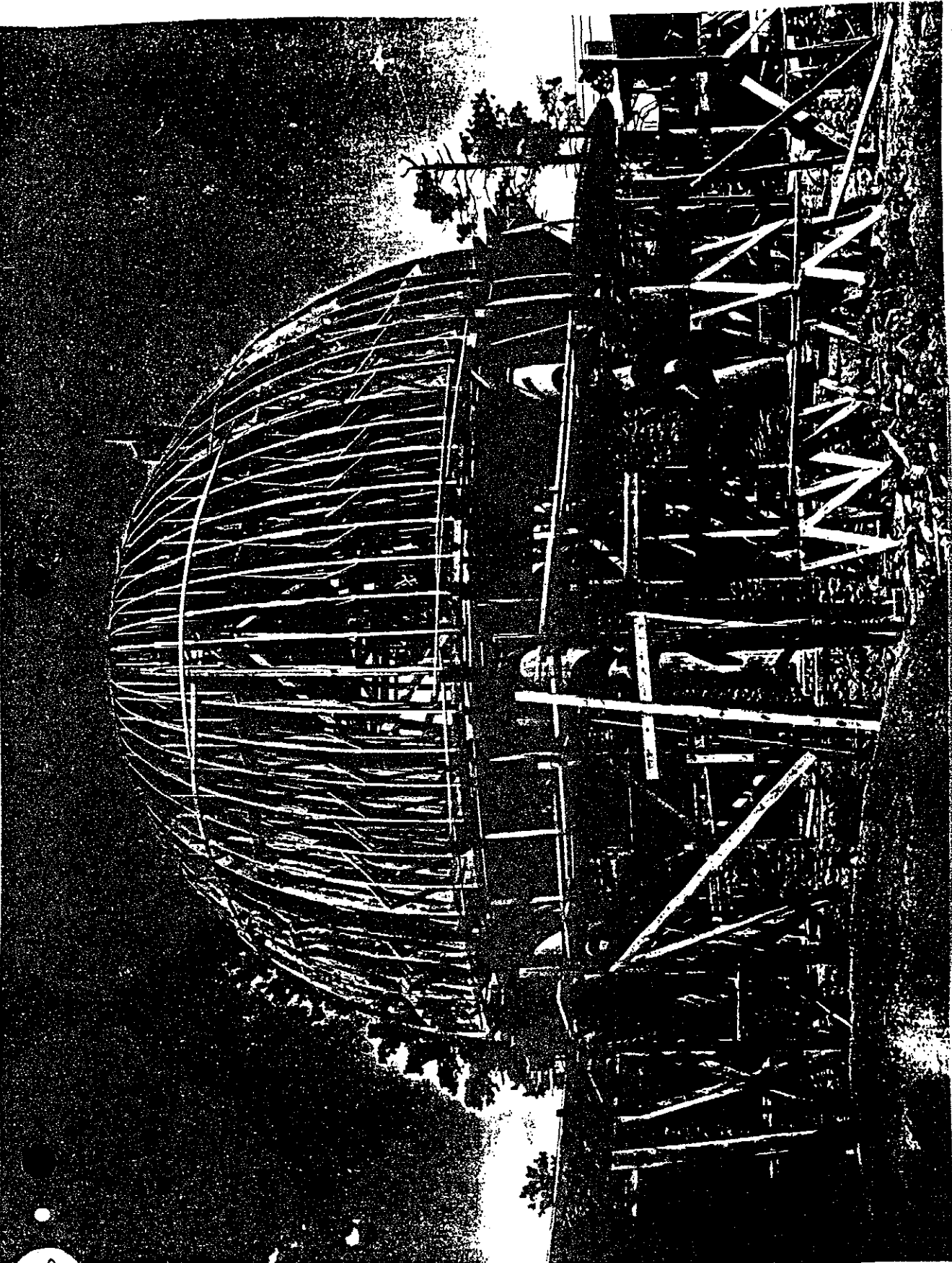


Figure #3 Photograph, construction of the Lowell Observatory Administration Building. Archives, Lowell Observatory, Flagstaff, Arizona, 1916.

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HABS NO. AZ-206-A (page 25)

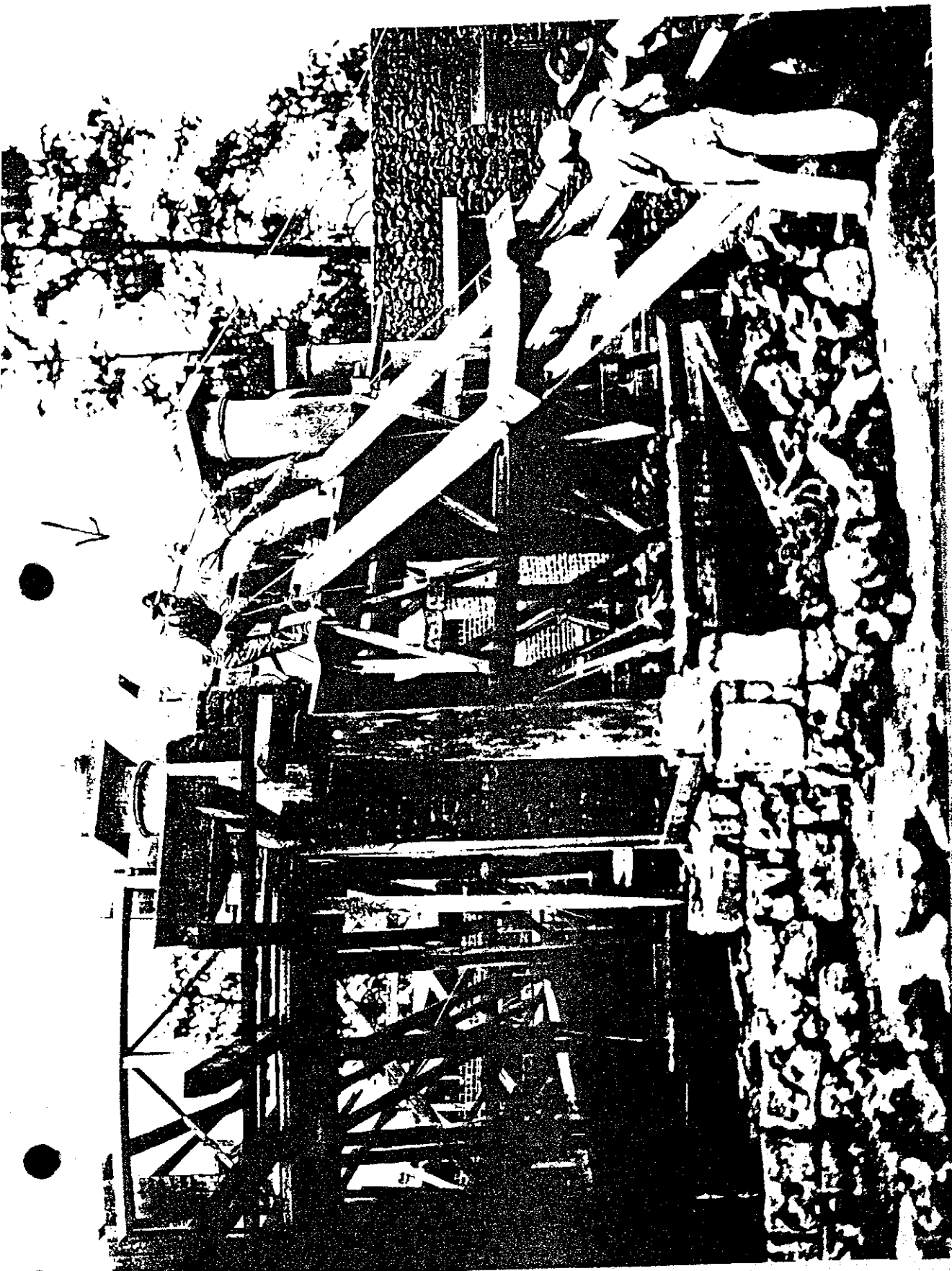


Figure #4 Photograph, Construction of the Lowell Observatory Administration Building. Archives, Lowell Observatory, Flagstaff, Arizona, 1916.