

The Observatory at Turner Farm

Great Falls, VA

History and Status



1736 - The Lands of Thomas Lord Fairfax Baron Cameron

6th Lord Fairfax of Cameron
Yorkshire Lord + Scottish Peer



Inherits the estate of his mother, the daughter of Thomas Colepeper, 2nd Baron Colepeper, Governor of Virginia.

These were confiscated during the American War of Independence.

1905 - Turner's 52 Acre Site Established as a Dairy Farm



Mark Turner Sr. and Mark Turner Jr. ran the farm until the prize Holsteins were auctioned off in August, 1969.

1954 - 1962 Nike Missile Radar Site

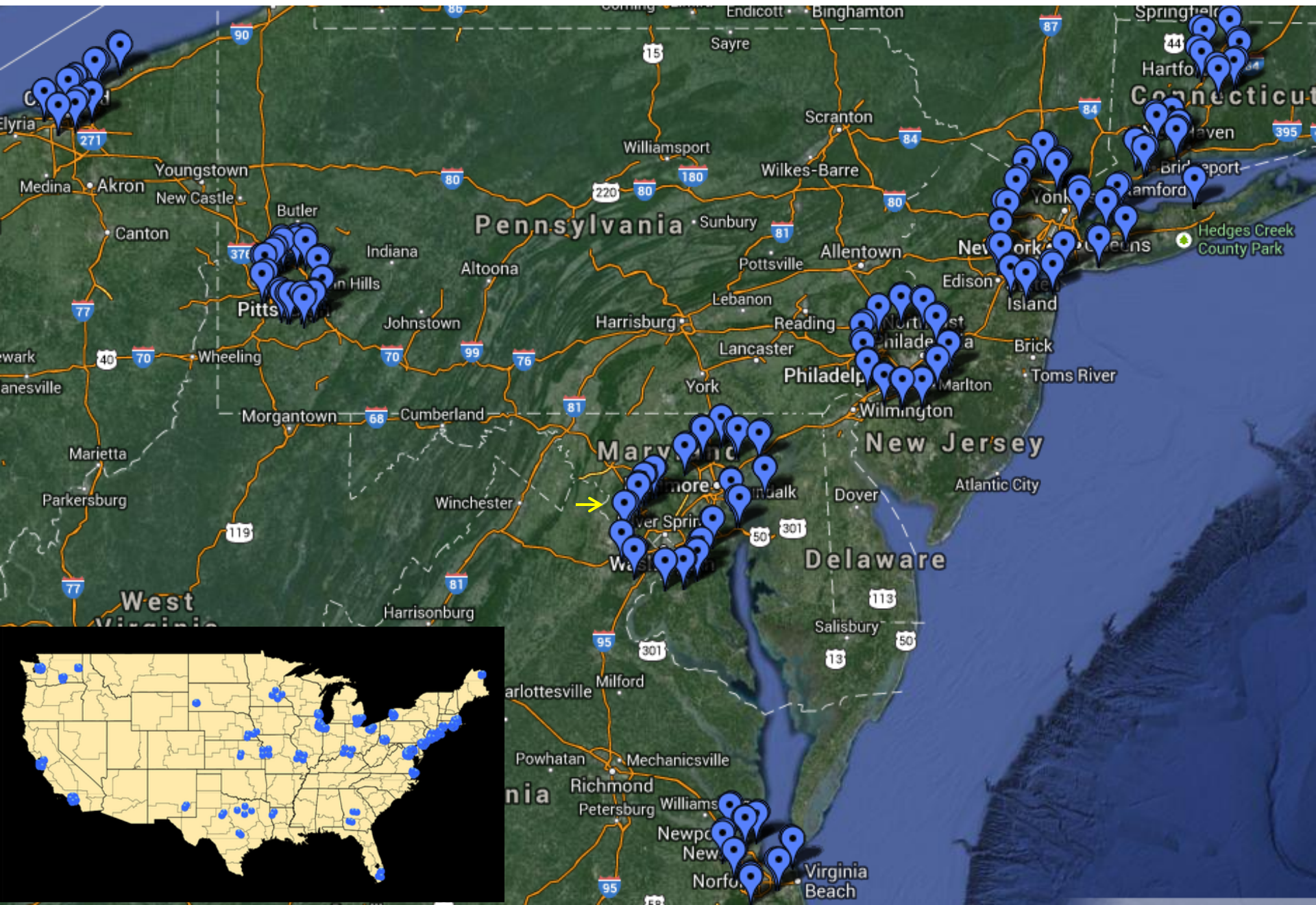


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GREAT FALLS NIKE MISSILE SITE

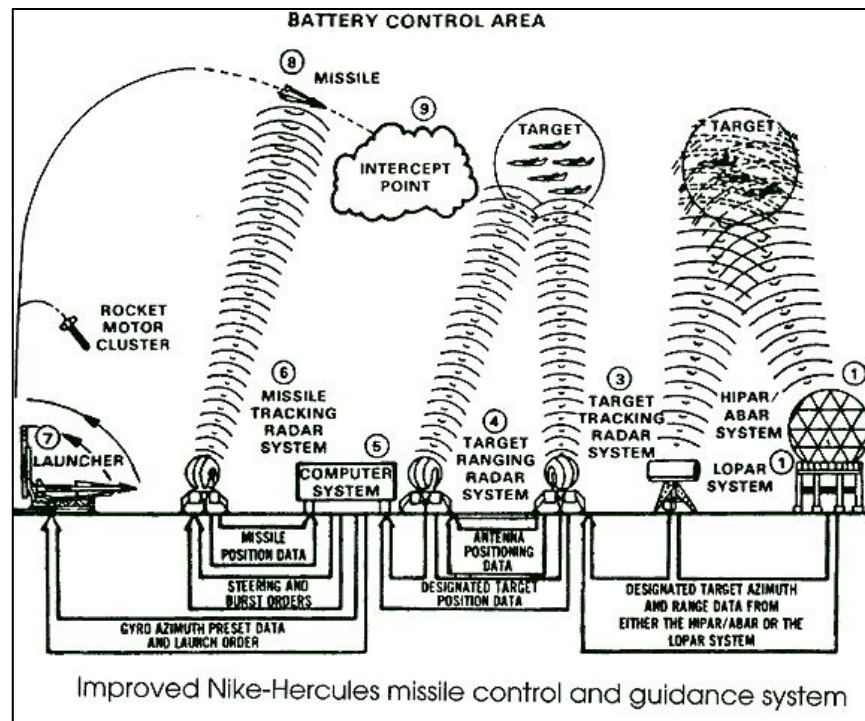
Just to the southeast were radar and other control equipment that formed a portion of one of three Nike anti-aircraft missile complexes in Fairfax County. The site was operated by the U.S. Army between 1954 and 1962. Established during the Cold War to defend Washington from Soviet air attack, this complex, along with those at Fairfax and Lorton, was among the thirteen sites that encircled Washington and Baltimore. The ring of Nike missile sites was reminiscent of the perimeter of forts that guarded the capital during the Civil War. The missiles, positioned on above-ground launchers, were located near here to the west.

Nike Sites on the Continental U.S.



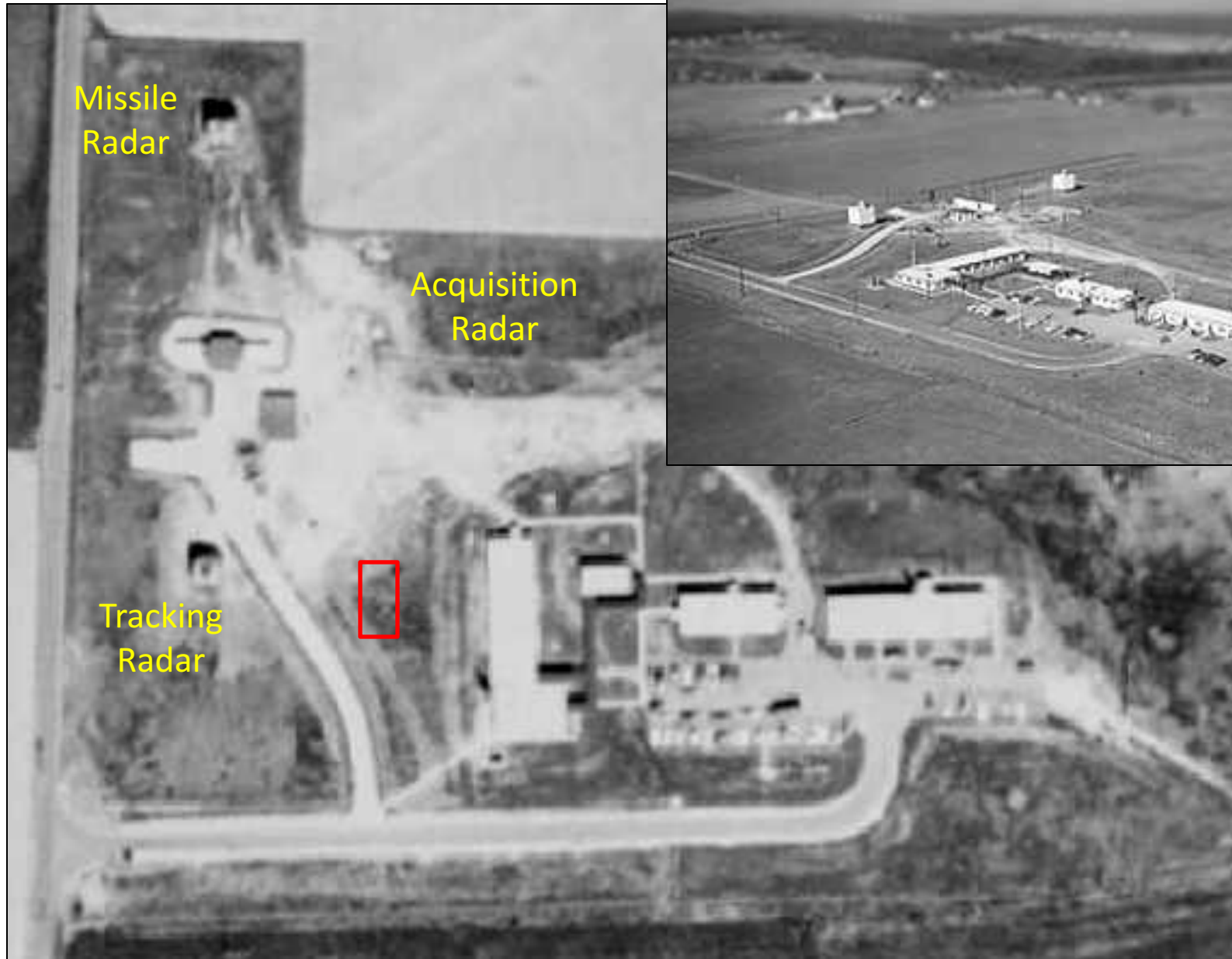
Nike Missile and the Integrated Fire Control System

Nike Ajax



The missile site was 1 mile west of Turner Farm along Utterback Store Road adjacent to present day Forestville ES

1955 - 12 Acres of Turner Farm used for Integrated Fire Control



1961 - 1993 U.S. Army Map Service



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U.S. ARMY MAP SERVICE

Here, at a former Nike missile site, the U.S. Army Map Service established a research station to support geo-location and navigation in 1961. Two years later, the Map Service initiated a significant satellite tracking program that became part of the Defense Mapping Agency in 1972. This tracking system contributed fundamentally to the Global Positioning System (GPS). The data gathered here enabled geospatial scientists to establish precise geographical reference points on the Earth's surface and to refine their estimates of the Earth's true shape and variations in its gravity field. This facility closed in 1993.

DEPARTMENT OF HISTORIC RESOURCES, 2017

U.S. Army Map Service - Geodesy Research Station



1961 - Support facility for geo-location and navigation to establish precise geographical reference points

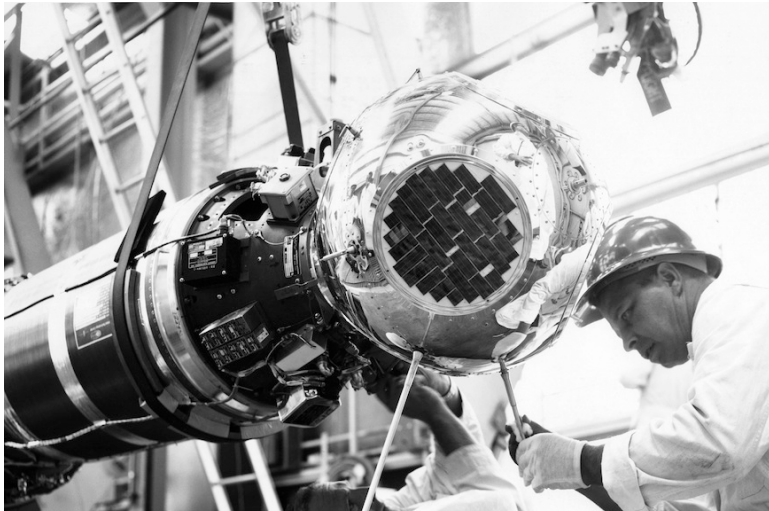
1963 - Initiated a satellite tracking program which made fundamental contributions to GPS

1972 - Became part of the Defense Mapping Agency and later the forerunner to the National Geospatial Intelligence Agency

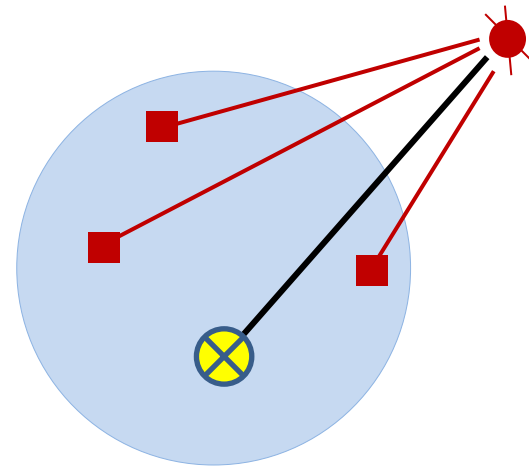
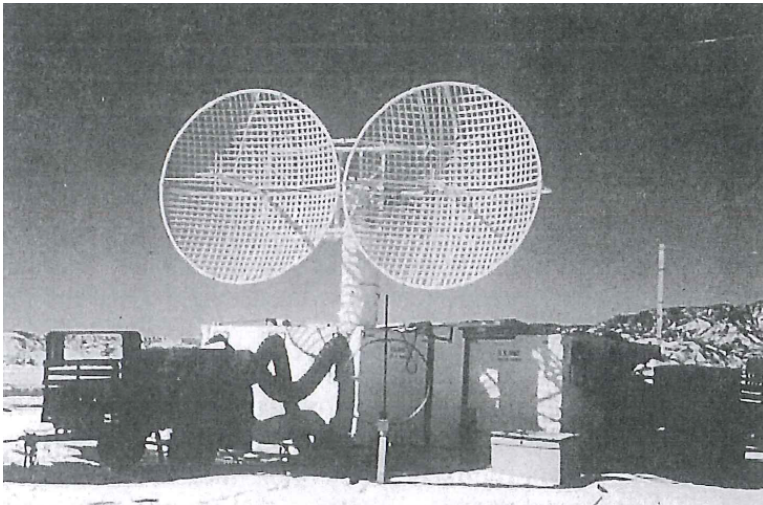
1993 - Facility closed but the data gathered helped refine estimates of Earth's true shape and variations in the gravitational field

24" Telescope now at Apache Point Observatory, NM

1964 to 1969 - SECOR



SECOR = Sequential Collation of Range
US Army program leads to NAVSTAR / GPS
Geodetic connection of isolated ref points
North America, Australia,
Japan, Pacific islands



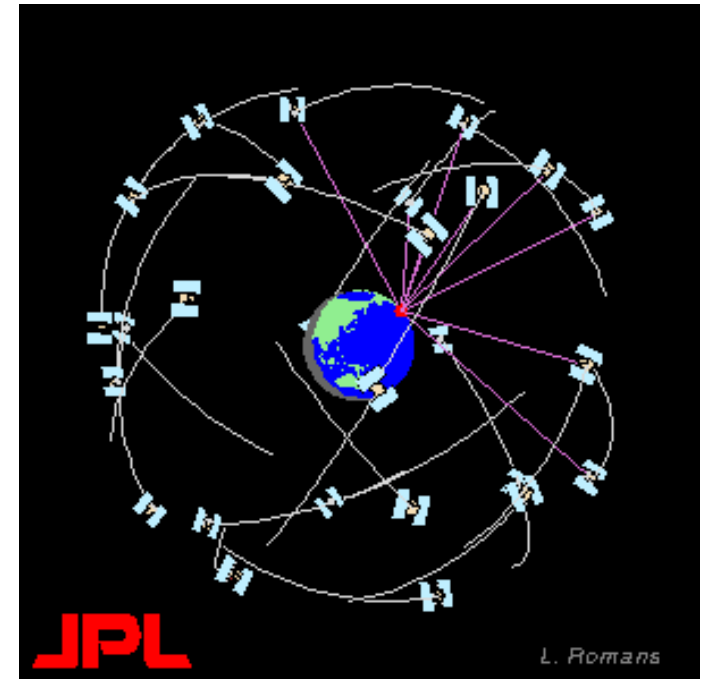
Range to surveyed sites
Obtain precise position ⊗

1960's to 1993: GPS Operational in 1995

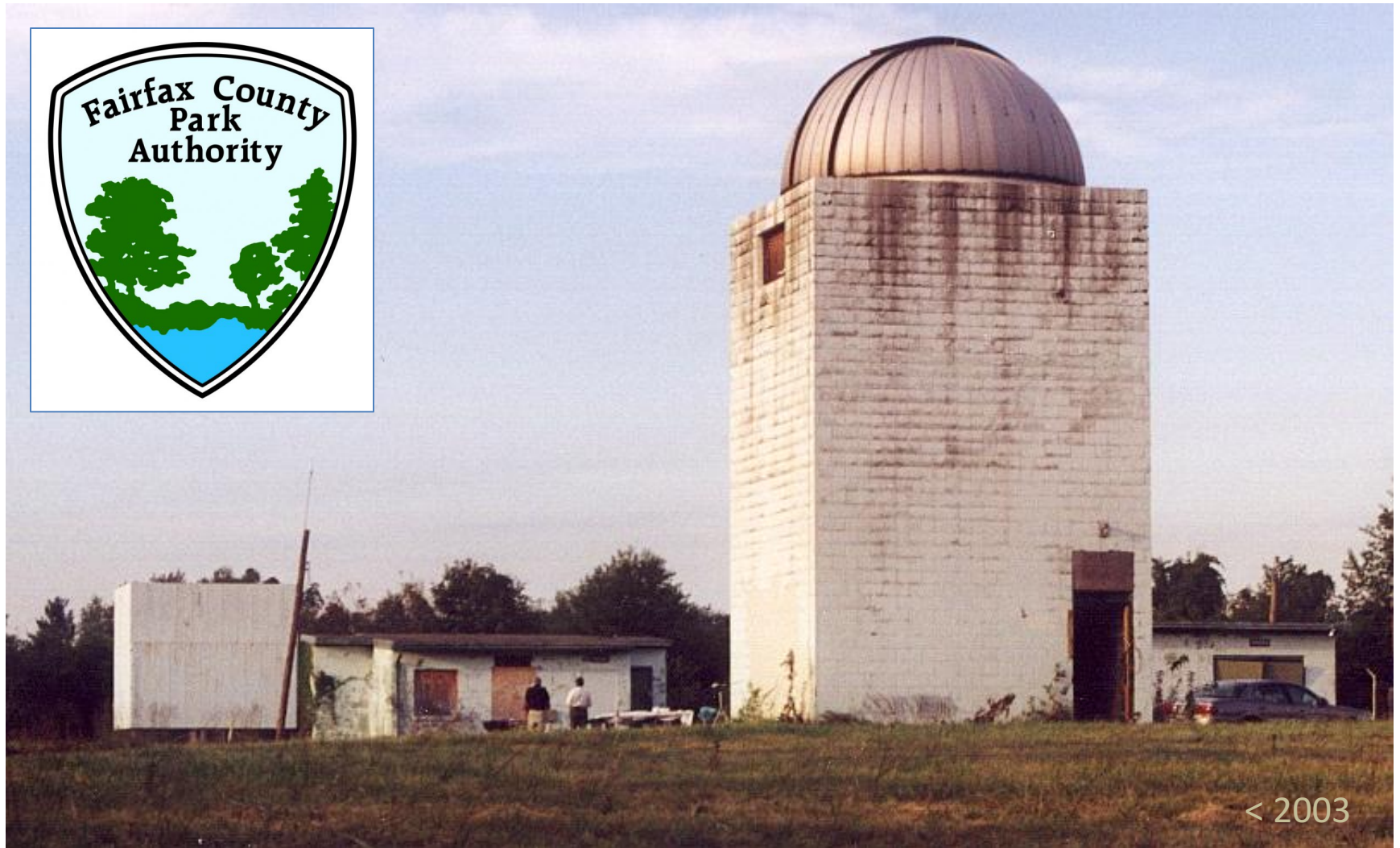
Special Mission Tracking Program → TRANSIT → SEASAT → GEOS → MAGSAT → GEOSAT → WGS



December 2007 Launch of a GPS Block IIR(M)
on a Delta II Rocket



1999 - Dept. of Interior Transfers Property to FCPA



Analemma Society Starts Initiative to Build Observatory

1993 - Great Falls Citizen Assoc requested “How best to use Turner Farm”

1998 - Analemma Society formed

2000 - Turner Farm master plan

2001 - AS / FCPA cooperative agreement

2004 - Bond to refurbish the tower

2006 - Roll-top planning begins

2008 - Bond for roll-top and RATO

2012 - 2nd bond for roll-top

2015 - Edelman donation for equipment

2016 - Roll-top construction completed



Charles and Jacque Olin

Provide a “unique opportunity” to open the skies to members of the public and allow them to stimulate their imaginations by gazing through a telescope.

2007 - Sundial Garden Phase 1



Jamestown Founding in 1607 - Quincentennial Sundial

2010 - Equestrian Ring & Playground at Turner Farm



2010 - Refurbishment of the Tower and Ash Dome



2013/07/24

2011 - 14" Meade SCT & AP 1200 Mount in the RATO



Doug Wood pictured - Photo taken during Spring 2017 before RATO building repairs

2014 - Ground Breaking for the Roll-Top

Charles Olin & Alan Figgatt
going over plans



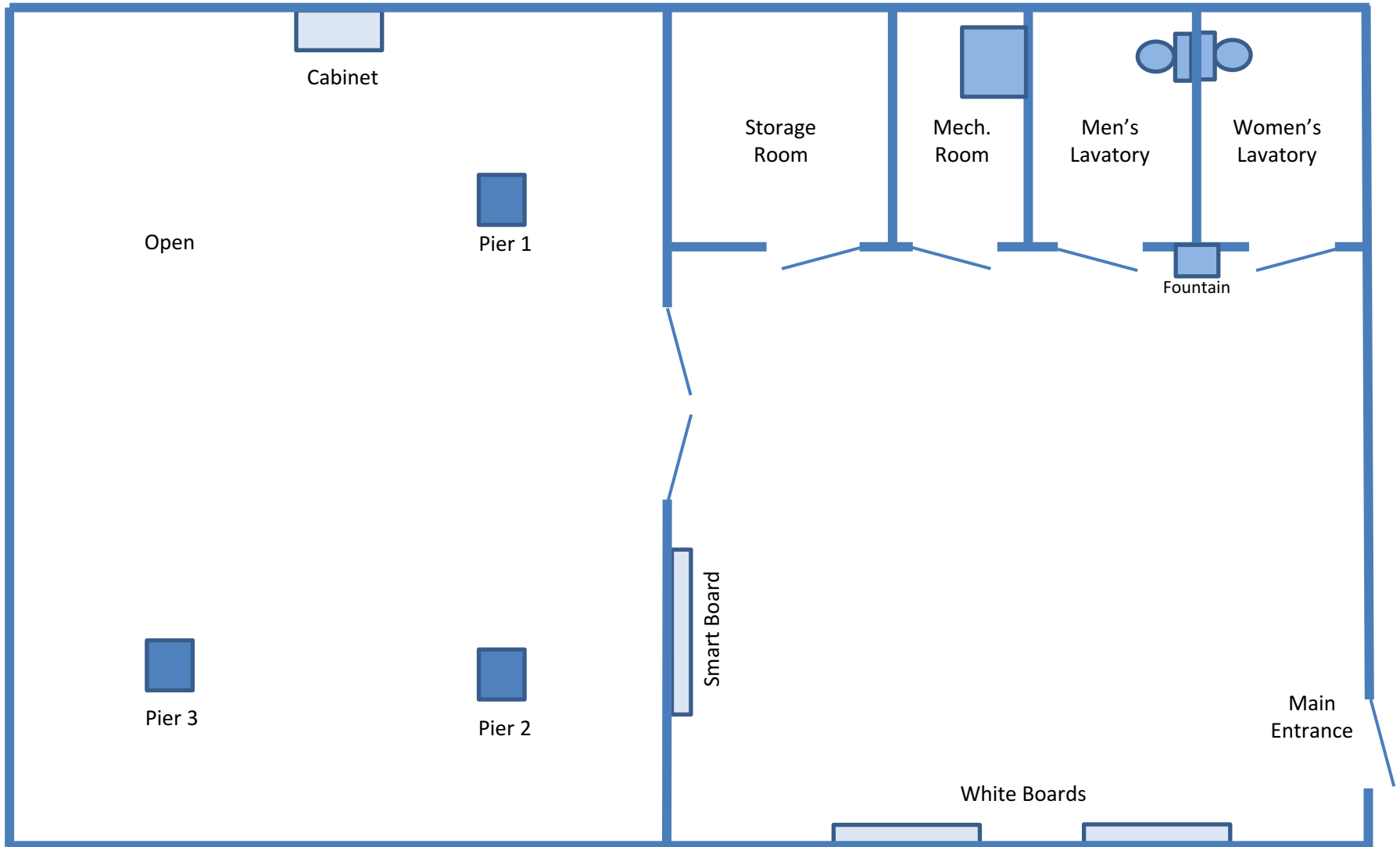
*\$1M
Two park bonds
Telecommunication funds
Mastenbrook grant
Edelman donation*

August 2016 - Construction Completed on the Roll-Top



**Designed by Shaffer Wilson Sarver & Gray of Herndon
Constructed by Brown and Root of Arlington.**

Roll-Top Building Room Layout

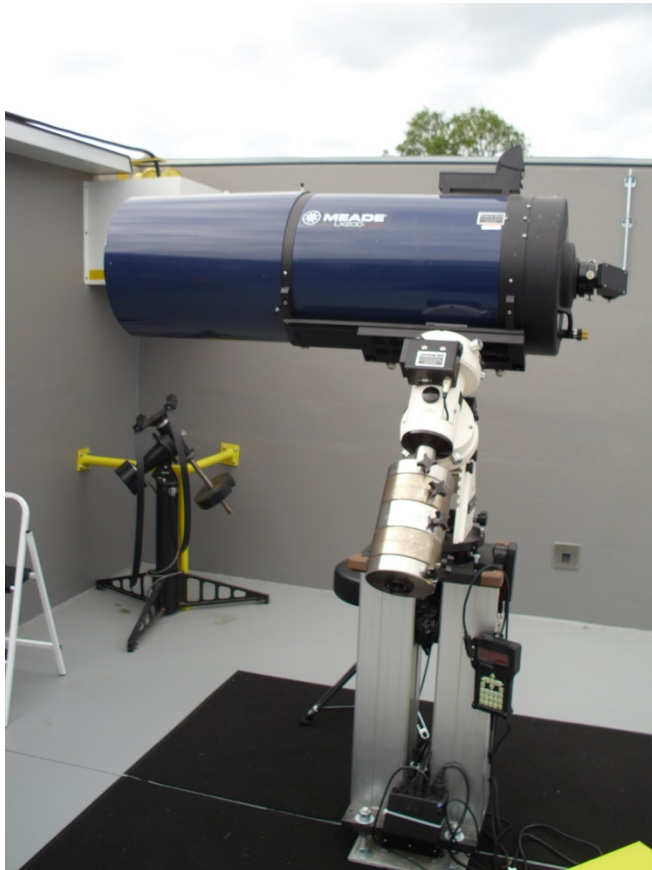


Each telescope station equipped with AC and 12 VDC

Classroom capacity 25 people

September 2016 - Telescopes Installed and Aligned

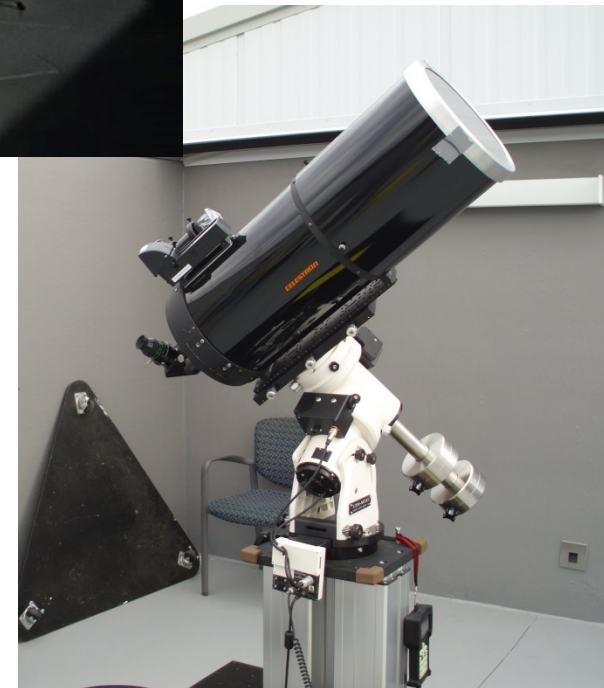
*AP1100 & AP1200 Goto Mounts
3 Pier Tech II Pedestals
120 VAC, 12 VDC*



7" AP180 Refractor ↑

← 14" Meade SCT

11" Celestron SCT →



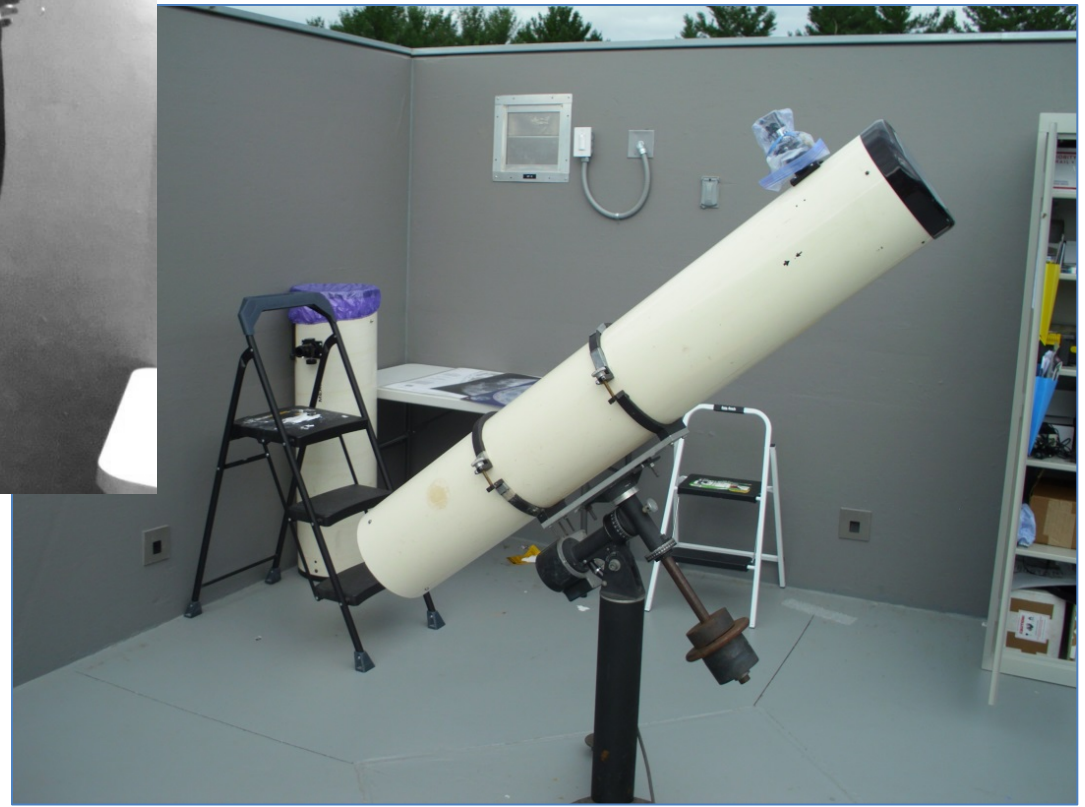
Pier Tech II Pedestals + Binoculars for People with Disabilities

“Old School” Manually Aimed Reflector



Binocs on a parallelogram mount

Bill Burtons' 8" Special



Plan is to replace this with a 16" reflector

Roof Opened as Twilight Fades



Outside Pad Area with AC and 12 VDC Power



Roll-Top

Classroom

Telescope Pad Area

RATO

October 2016 - Official Opening Ceremony for the RT



Jean and Ric Edelman at the Dedication Ceremony



2003 to 2016 - Public Outreach at Turner Farm

Analemma and NOVAC Members on the Turner Farm field



2016 / 2017 - Public Outreach on Friday Nights

Analemma Society and NOVAC Volunteer Support



2017 - Classes to be Held at the Roll-Top

Available through the Fairfax County Parktakes web site

Intro to Telescopes

July 26, Aug 29, Oct 18, Nov 14

Intro to Meteor Astronomy

Aug 12, Oct 19, Dec 12

Exploring the Moon

Aug 2, Oct 26, Nov 27

Family Fun Night at the Scopes

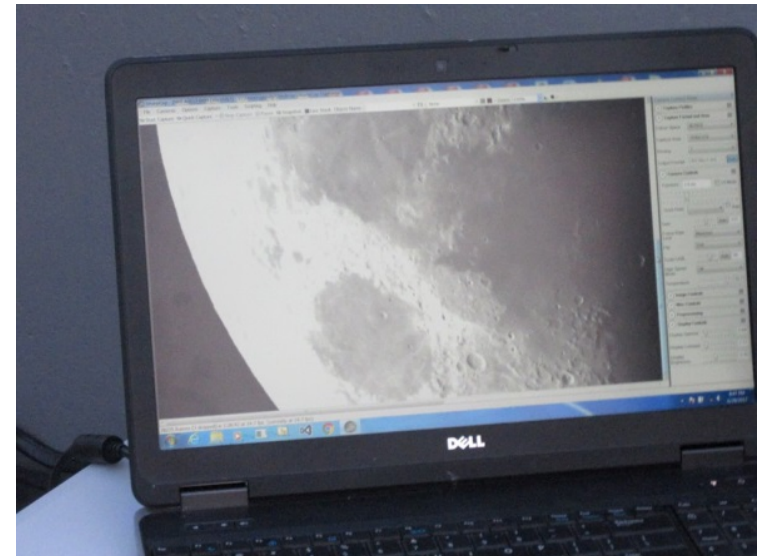
Sept 26

Astronomical Seminar

Sept 13, Oct 11, Nov 8, Dec 6



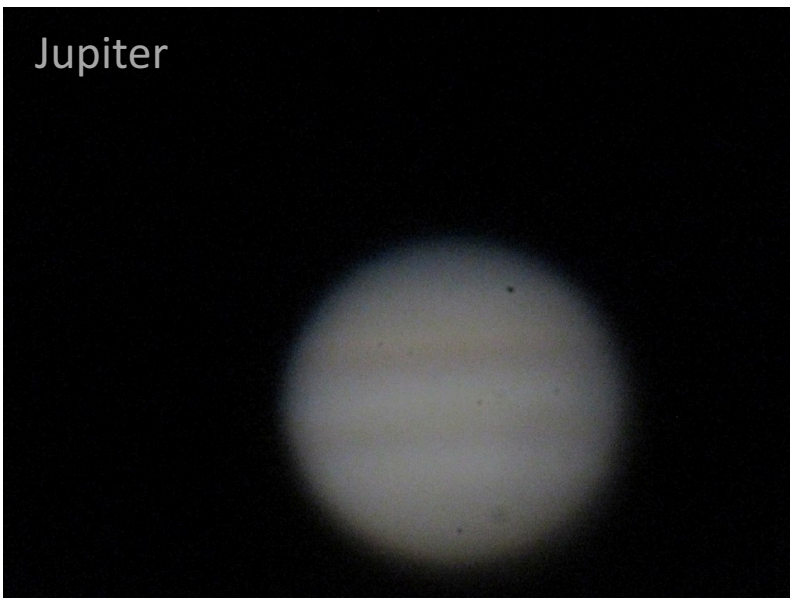
Lunar Class held on June 29



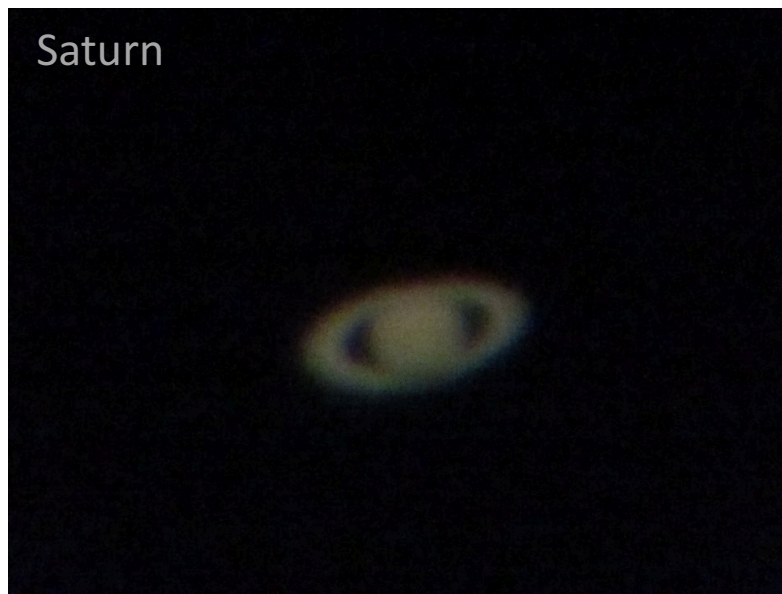
Live Video Feed

Public Loves Taking Snapshots using Cell Phones

Jupiter



Saturn



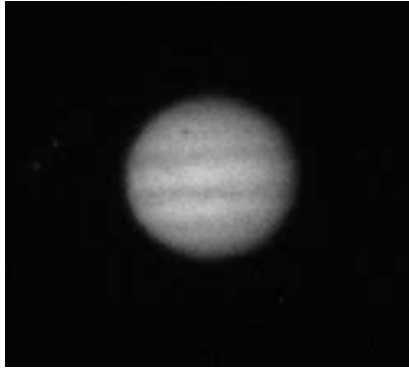
1st Quarter Moon



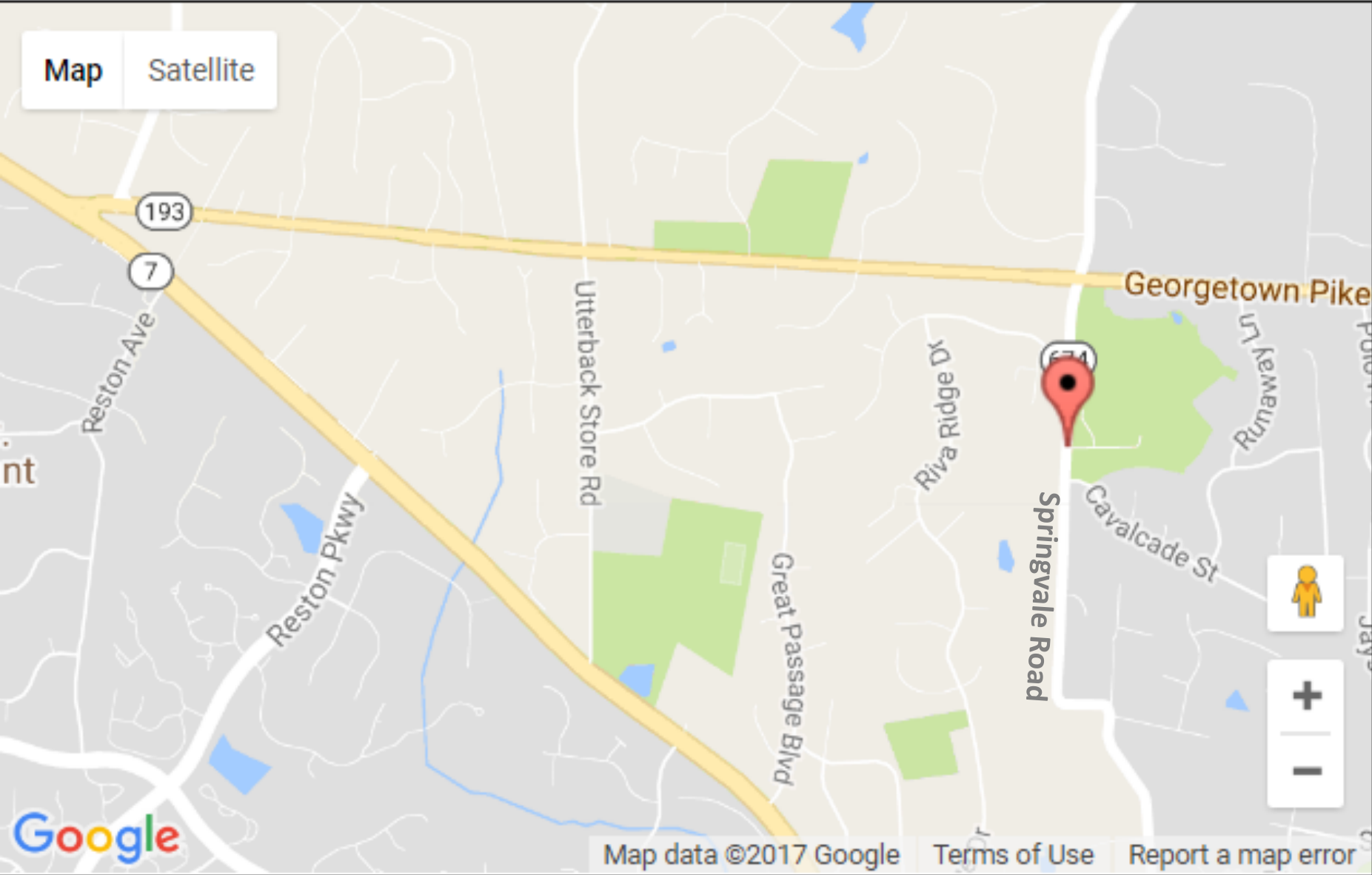
Venus just before Inferior Conjunction



Snapshots using an Imager on the Refractor



Location: 925 Springvale Road, Great Falls, VA





**Come visit on
Friday nights**

**Sign up for a class
at Parktakes**

**Volunteer via the
Analemma Society
or NOVAC**