The Home Observatory

Presented by Scott Busby
For
Rappahannock Astronomy Club
11 Jul 2012
Agenda

• Why a Home Observatory?
• Deciding on Which Type – Dome or Roll-Off Roof
• Project Planning
  – Cost
  – Location
  – Materials
• Buy or Build from Scratch
  – Skills
  – Vendors
• Construction
• Conclusion
Why a Home Observatory?

- Permanent Setup
- Protection from the Elements
- Reduces Light Interference/Pollution
- Fortress of Solitude
Dome or Roll-Off Roof

- Dome
  - Completely Encloses Observer
  - Resists Dew
  - Protects Equipment
  - Limited Environment Control
  - Protects from Extraneous Light
  - Traditional Design
  - Limits the Sky View

- Roll-Off Roof
  - Observer Completely Exposed
  - Dew can be a Problem
  - Protects Equipment when Closed
  - Non-Traditional Design
  - 360 degree Sky View
  - Offers more Working Space
  - Easier to Camouflage from HOAs
Examples of Dome Observatories
Examples of Roll-Off Roof Observatories
Project Planning

• Cost

• Location
  – Clear of obstructions like trees, poles and wires
  – 360 deg FOV
  – Preferably away from light sources

• Materials and Tools
  – Home Depot or Lowe’s
Observatory Platform

- Wood construction
- Dome diameter: 10'
- Deck diameter: 16'
- Center hole 26''
- Elevation 2/3' above G.L.
- Top of column flush w/ deck

Center column
- Concrete w/rebar
- 24'' diameter
- 4 feet Below G.L.
- 2/3 feet Above G.L.

Ground Post

3 foot walkway around dome

10 foot diameter dome footprint

6'' x 6''

"Not to scale"
Belmont Observatory
Dome Structure & Telescope

Minimum pier Height
29 inches

Maximum pier Height
48 inches

“Not to scale”

Deck 16 feet overall/ 3 feet walkway around Dome

6 foot Concrete Column

10 feet

Deck

Shutter

Pier-Tech 2

1 foot

3 feet

5 feet

Door

3 feet walkway around Dome
Buy or Build from Scratch

• Skills (Maybe you have friends)
  – Got have tools or friends with tools

• Vendors
  – Technical Innovations
  – Sky Shed
  – Sirius
  – Astrohaven
Construction
Construction Cont.
Construction Cont.
Conclusion
Belmont Observatory – All finished!!!
If the clouds would just go away...