Hubble Science Briefing
A Horsehead of a Different Color
April 25, 2013
Zolt Levay • STScI
- Horsehead Nebula IR
- *HST* 23rd anniversary
- Hubble Heritage observations
- Color composite image
- 3D visualization
The Orion constellation

Photo: Akira Fujii
The Orion constellation: a closer view
Flame Nebula complex + Horsehead Nebula
Ground-based visible-light

Hydrogen-α (HST’s WFPC2, 2001)
HST’s WFPC2 (2001)
Horsehead/Flame Nebula region (ground-based infrared)
HST: WFC3 (IR) + ACS/WFC + WFPC2 (2001)
HST WFC3 filters
WFC3/IR data

9x18min. F110W J

9x23min. F160W H
Color applied to IR mosaics

The color images are a reconstruction or a visualization of the different energies that are inherent in the capture of the light in the images. The colors are not arbitrary.
The initial color composite, “flat” in tone, includes some artifacts.
Examples of image blemishes
Distant background galaxies
• farther into IR than HST
• better resolution than HST
• launching in 2018
3D Visualization
Reassembling the separate elements, using 3D modeling software
3D model with overlaid HST image
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