Expenses Through FY11

- Northrop-Grumman: 33.2% spent
- Misc. Observatory Support: 1.3% spent
- Ground System: 4.9% spent
- ISIM and Science Instruments: 24.2% spent
- Technology Development: 3.2% spent
- Science Working Group: 0.3% spent
- Miscellaneous: 5.2% spent
- Civil Service Labor: 7.1% spent
- I&T test chamber: 2.5% spent
- MIRI cryocooler: 1.6% spent
- Mirrors (Ball Aerospace): 15.4% spent
- System Level I&T: 1.1% spent
## FY11 Accomplishments

<table>
<thead>
<tr>
<th>Month</th>
<th>Milestone</th>
<th>Comment</th>
</tr>
</thead>
</table>
| January '11 | Ship MIRI Focal Plane Electronics to ESA (RAL)                             | Successfully Completed - 1/24  
Ball's Flight Actuator Drive Unit S/W Test Review  
Successfully Completed – 1/20                                                                                   |
| February '11 | Deliver NRISpec flight spare detector to GSFC  
Pathfinder PMBSS delivered to NGAS  
Establish No-Earlier-Than Launch Readiness Date as part of replan  
Establish Work Breakdown Structure for new GSFC responsibilities | Successfully Completed – 1/29  
Pathfinder delivered to NGAS on 3/25  
Based on current funding constraints a NET LRD of Oct. 2016 established, FY11 and FY12 schedule does not preclude an earlier date if deemed possible in the future – Completed 2/25  
Successfully Completed – 2/28                                                                                   |
| March '11 | Complete flight IRSU Thermal Vacuum testing  
Deliver FGS ETU electronics to ISIM I&T  
Complete 2018 LRD project lead JCL | Successfully Completed – 2/19  
Successfully Completed – 2/24  
Preliminary Budget was presented to Program Office and Center Management on 4/7                                                                 |
| April '11 | Pathfinder Primary Mirror Segments Assemblies complete  
Deliver ICDH ETU to ISIM I&T  
Complete 2018 LRD project lead JCL | Successfully Completed - 4/25  
Successfully Completed – 4/22  
Initial JCL run completed – 4/28                                                                                   |
| May '11  | Start flight FGS environmental testing (instrument level)  
Complete S/C Secondary Mirror Support Cone Structure IDR 3/4 | Successfully Completed - 5/4  
Successfully completed – 4/20                                                                                                         |
| June '11 | Complete CCTS Build 2.3  
Start ISIM level I&T | Successfully completed – 4/13  
Successfully Completed - 6/24  
Began the ISIM Flight I&T with the integration of the Spacecraft Simulator 2A (SCSIM-2A) into the Flight Electrical Environment.                                                                 |
| July '11 | Deliver ISIM Region 1 Harnesses  
Deliver ISIM Structure to ISIM I&T | Successfully completed – 7/22  
Successfully completed – 7/28                                                                                             |
| September '11 | Deliver Flight ISIM Electronics Compartment to ISIM I&T  
Deliver flight ICDH #1 to ISIM I&T | Deferred due to design changes  
Successfully Completed 9/27                                                                                                      |

**Blue** indicates accomplishment ahead of schedule

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February 2012 AAAC
Recent Hardware Progress

Sunshield Layer 5 Test Unit

Module A

NIRCam

Module B

CSA’s Fine Guidance Sensor leaving its 85 day cryo test

Flight Aft Optics System ready for test

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# Budget Authority ($M)

Figures from October 2011 report to Congress

<table>
<thead>
<tr>
<th></th>
<th>Prior</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>BTC</th>
<th>Total</th>
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<tbody>
<tr>
<td>“Replan” Revised Profile</td>
<td>3,529</td>
<td>528</td>
<td>628</td>
<td>659</td>
<td>646</td>
<td>622</td>
<td>2,224</td>
<td>8,835</td>
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</table>

Figures rounded to nearest million
# FYI2 Accomplishments

<table>
<thead>
<tr>
<th>Month</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct '11</td>
<td>Begin construction of 140,000-lb robotic facility to build segmented main mirror at GSFC</td>
</tr>
<tr>
<td>Nov '11</td>
<td>Complete electronics simulator model for Integrated Science Instrument Module (&quot;ISIM&quot;) Deliver tools for software development environment and verification</td>
</tr>
<tr>
<td>Dec '11</td>
<td>Install Helium shroud floor at Johnson Space Center thermal vacuum chamber (&quot;JSC TVC&quot;) Determine root cause of NIRSpec optical bench flaw</td>
</tr>
<tr>
<td>Jan '12</td>
<td>Conduct Critical Design Review for Spacecraft-to-Optical Telescope Element vibration isolation system Finish building Center of Curvature Optical Assembly (&quot;COCOA&quot;) for testing primary mirror in JSC TVC Review preliminary requirements for ground structure for spacecraft equipment panels Complete Aft Optic System integration and alignment Update Program Plan and Program Commitment Agreement to reflect replan</td>
</tr>
<tr>
<td>Feb '12</td>
<td>Complete assembly and initial testing of main mirrors at Marshall Space Flight Center Install Helium shroud walls at JSC TVC</td>
</tr>
<tr>
<td></td>
<td>Assembly began 10/4</td>
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<tr>
<td></td>
<td>Completed 11/15</td>
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<td>Completed 10/27</td>
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<tr>
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<td>Completed 10/26</td>
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<tr>
<td></td>
<td>Completed 12/19</td>
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</table>
Work-To-Go

Relative proportion of project funding to-go

- Sunshield, Spacecraft (60%)
- Ground System (76%)
- ISIM (22%)
- System Level I&T (85%)
- Labor & Related Expenses (47%)
- Proj. Support (50%)
- Optical Telescope Element (21%)
- JSC Chamber A modifications (30%)
- JPL Cryocooler (35%)
- Science & SWG (67%)

% work on this element to-go
How to stay current

• Mission status
  ➤ http://www.jwst.nasa.gov/ (navigation links on left, “Status”)

• Hardware images and videos
  ➤ http://www.flickr.com/photos/nasawebbtelescope/
  ➤ http://www.youtube.com/user/NASAWebbTelescope

• Exposure time estimators
  ➤ http://jwstetc.stsci.edu/etc/