

Foreword

Taken from: Hubble 2006 Science Year in Review

The full contents of this book include more Hubble science articles, an overview of the telescope, and more. The complete volume and its component sections are available for download online at:

www.hubblesite.org/hubble_discoveries/science_year_in_review



National Aeronautics and Space Administration



Hubble 2006

Science Year in Review

www.nasa.gov

Hubble 2006: Science Year in Review



The Great Nebula in Orion. See article on page 59.

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Foreword

On October 31, 2006, NASA Administrator Mike Griffin announced his decision to launch a shuttle mission in 2008 to refurbish and upgrade the *Hubble Space Telescope*. This decision provides the opportunity to significantly increase *Hubble's* scientific capability and prolong its life as humankind's most productive scientific instrument. With successful servicing, *Hubble* will be at its all-time peak performance, with instruments many times more sensitive than the original set launched with the observatory in 1990.

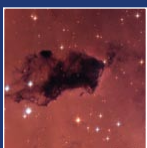
Meanwhile, *Hubble* continues to produce great science. In 2006, almost 700 peer-reviewed, scientific papers were published using *Hubble* data—more than in any previous year. Images from the telescope continue to excite and inspire both the layman and the scientist.

The 10 science articles selected for this year's annual science report exemplify the range of *Hubble* research—from the Solar System, across our Milky Way, and on to distant galaxies. The objects of study include a new feature on Jupiter, binaries in the Kuiper Belt, Cepheid variable stars, the Orion Nebula, distant transiting planets, lensing galaxies, active galactic nuclei, “red-and-dead” galaxies, and galactic outflows and jets. Each narrative strives to construct the reader's understanding of the topics and issues, and to place the latest research in historical, as well as scientific, context.

These essays reveal trends in the *practice* of astronomy. More powerful computers are permitting astronomers to study ever-larger data sets, enabling the discovery of subtle effects and rare objects. (Two investigations created mosaic images that are among the largest produced to date.) Multiwavelength data sets from ground-based telescopes, as well as other great observatories—*Spitzer* and *Chandra*—are increasingly important for holistic interpretations of *Hubble* results.

This yearbook also presents profiles of 12 individuals who work with *Hubble*, or *Hubble* data, on a daily basis. They are representative of the many students, scientists, engineers, and other professions who are proudly associated with *Hubble*. Their stories collectively communicate the excitement and reward of careers related to space science and technology.


We hope you enjoy this portrait of *Hubble's* successful and “sweet sixteenth” year in orbit. *The best is yet to come!*



Left: An exquisite recent *Hubble* image of the edge-on disk galaxy NGC 5866.

Pages 6-7: Opaque, dark knots of gas and dust are seen against the background of a nearby emission nebula known as NCG 281.





The *Space Telescope* will help solve many astronomical puzzles. The greatest excitement, however, will come when the pictures returned from the satellite reveal things no one in this generation of astronomers has dreamed of, phenomena that only the next generation will be privileged to understand.

- *John N. Bahcall and Lyman Spitzer, Jr., 1982, Scientific American, 247, 40.*