



# M-STAR

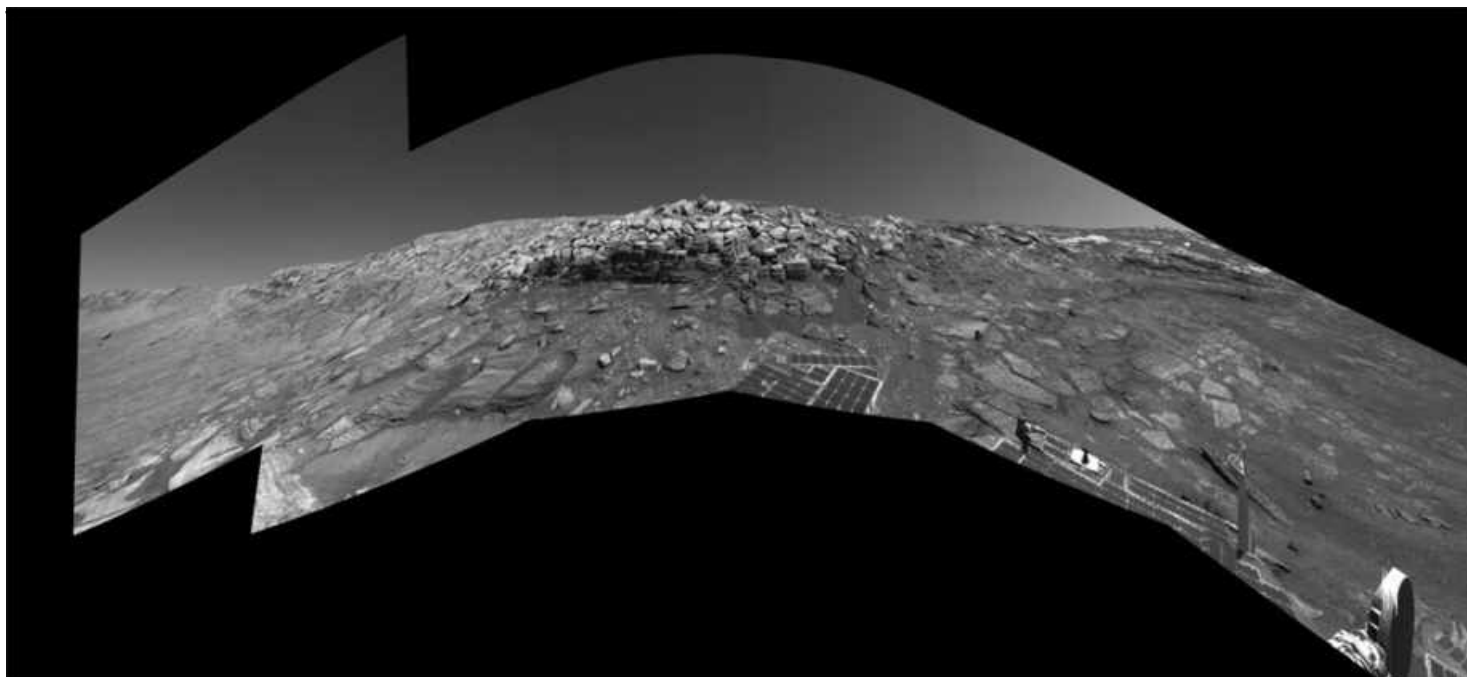


<http://mstar.members.easyspace.com>

Vol. 8 No. 12

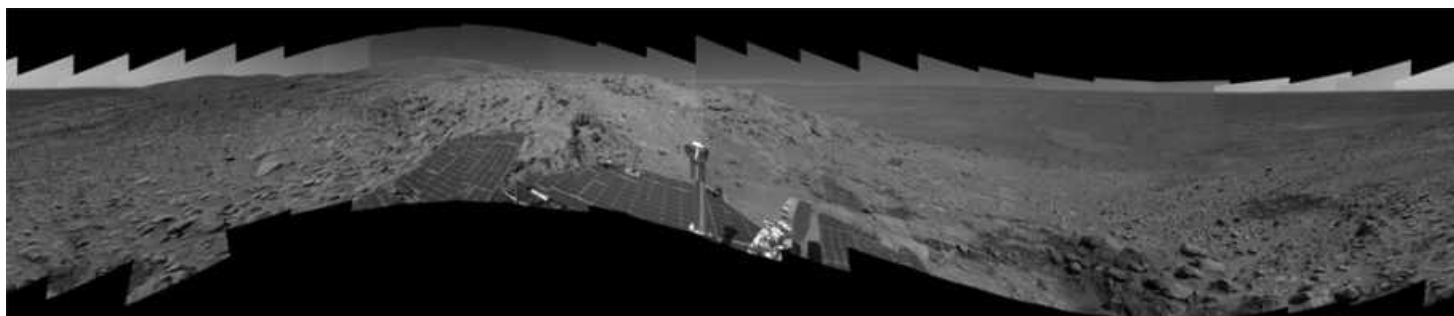
December, 2004

Founded in 1982



As NASA's Mars Exploration Rover Opportunity was making its way back toward its original entry path into "Endurance Crater," scientists and engineers spotted what they hoped might be a shortcut for climbing out of the crater. The possible exit path, pictured on the far right of this image where the outcrop is punctuated, was eventually deemed too hazardous for the rover to attempt. Opportunity would have had to cross terrain with a slope of 28 degrees and face a tall rock outcropping very close to the exit chute opening which, itself, is too narrow for the rover to pass. This view combines several frames taken by the rover's navigation camera during Opportunity's 297th sol on Mars (Nov. 24, 2004). It is the right-eye member of a stereo pair presented in a cylindrical-perspective projection with geometric seam correction. The location from which the image was taken has been designated as Opportunity's Site 38, Position 97.

*Image credit: NASA/JPL*



This is the panoramic camera right-eye view from a stereo pair of images taken by NASA's Mars Exploration Rover in the "Columbia Hills."

The highest point visible in this panorama is "Husband Hill," named for space shuttle Columbia Commander Rick Husband. To the right are the rover's tracks through the soil, where it stopped to perform maintenance on its right front wheel in July. In the distance, below the hills, is the floor of Gusev Crater, where Spirit landed Jan. 3, 2004, before traveling more than 3 kilometers (1.8 miles) to reach this point. This vista comprises 188 images taken between Spirit's 213th day, or sol, on Mars to its 223rd sol (Aug. 9 to 19, 2004). Team members at NASA's Jet Propulsion Laboratory and Cornell University spent several weeks processing images and producing geometric maps to stitch all the images together in this mosaic. The 360-degree view is presented in a cylindrical-perspective map projection with geometric seam correction. *Image credit: NASA/JPL/Cornell*

## SKY & TELESCOPE's WEEKLY NEWS BULLETIN

*Copyright 2002 Sky Publishing Corp. - Reproduced with Permission*

Welcome to S&T's Weekly News Bulletin. Images, the full text of stories abridged here, and other enhancements are available on our Web site, SkyandTelescope.com, at the URLs provided below. Clear skies!

### THE GEMINIDS ARE COMING

The Geminid meteors, due to peak this year on the night of December 13-14, may be the best annual shower in a typical year, even surpassing the Perseids of August. This year there's no glare from moonlight to worry about because the Moon is a two-day-old crescent setting early in the evening sky.

[http://SkyandTelescope.com/observing/objects/meteors/article\\_802\\_1.asp](http://SkyandTelescope.com/observing/objects/meteors/article_802_1.asp)

### BUSH FIRES THREATEN "THE DISH"

Over the past several days, bush fires raged within 1 kilometer (0.6 mile) of the 64-meter Parkes radio telescope, located in New South Wales, Australia. Besides making innumerable contributions to science, and receiving footage from the Apollo moonwalkers, Parkes Observatory was featured in the 2001 critically acclaimed movie "The Dish" starring Sam Neill. Fortunately, the telescope sustained no damage, and the winds have shifted away from the facility, so it is no longer in danger. Still, the fire forced the evacuation of most of the observatory's staff....

[http://SkyandTelescope.com/news/article\\_1397\\_1.asp](http://SkyandTelescope.com/news/article_1397_1.asp)

### SURREAL SATURN PORTRAIT

As Cassini recedes from Saturn after completing its first orbit, the spacecraft's narrow-angle camera is returning mesmerizing images of the planet, rings, and moons. A new image showcases curving shadows cast by the rings on Saturn's northern hemisphere....

[http://SkyandTelescope.com/news/article\\_1395\\_1.asp](http://SkyandTelescope.com/news/article_1395_1.asp)

### Swift Takes Flight at Last

After many months of delays, NASA's Swift high-energy observatory was launched on November 20th from Cape Canaveral, Florida. The Delta rocket lifted off at 12:16 p.m. Eastern Standard Time, boosting the satellite into a 600-kilometer-high orbit. Once operational, Swift will rapidly pinpoint enigmatic gamma-ray bursts (GRBs) and then scrutinize their afterglows using X-ray and ultraviolet/visible-light detectors. The satellite is expected to observe several bursts per week. Swift will also perform a sensitive all-sky survey in hard (high-energy) X-rays.

[http://SkyandTelescope.com/news/article\\_1392\\_1.asp](http://SkyandTelescope.com/news/article_1392_1.asp)

### SOMETHING WARM IN A VERY DARK PLACE

They teach in school that stars form in gas-and-dust clouds that collapse under the influence of their own gravity. It sounds simple, but how it actually happens is complicated, confusing, and somewhat mysterious. It's like telling a visitor to Earth, "Water runs downhill." True enough, but that hardly captures the essence of Victoria Falls, the Mississippi Delta, or a trout stream in the Vermont woods.

A key gap in our star-forming knowledge is just what happens as a shapeless, collapsing cloud knot turns into a symmetrical, rotating disk around a central pre-star. The action is hidden from view inside dark nebular blobs -- "cloud cores"-- where anything could be going on unseen. Looking inside these star-forming globules is one reason why NASA built and launched the infrared Spitzer Space Telescope.

A team of 30 astronomers has used Spitzer to examine dozens of dark cloud cores....

[http://SkyandTelescope.com/news/article\\_1391\\_1.asp](http://SkyandTelescope.com/news/article_1391_1.asp)

### URANUS WEATHER PICKS UP

If you had to vote for the most boring planet, you might pick Uranus. Unenhanced Voyager 2 images from its 1986 flyby revealed a bland, monochromatic, turquoise countenance with few clouds or belts. But recent near-infrared images from the 10-meter Keck II telescope in Hawaii demonstrate the old maxim that first impressions can be deceiving.

The images, taken in 2003 and 2004 with adaptive optics to counter atmospheric blurring, revealed dozens of discrete clouds, which is more than the total seen in all previous observations combined up to the year 2000....

[http://SkyandTelescope.com/news/article\\_1390\\_1.asp](http://SkyandTelescope.com/news/article_1390_1.asp)

## M-STAR Officers

### **President:**

Anthony Ochoa  
928 W. 9<sup>th</sup> St.  
Merced, Ca, 95340  
383-6073  
anthonychoa95@hotmail.com

### **Vice President:**

Vacancy

### **Secretary:**

John Gasper  
2500 N. Hwy 59, #113  
Merced, Ca 95340  
384-7932

### **Treasurer:**

Michael T. Ryan  
1136 N. Stratford Ave  
Atwater, CA 95301  
358-4497  
michaeltryan@mercednet.com

### **Web-Master &**

### **Technical Advisor:**

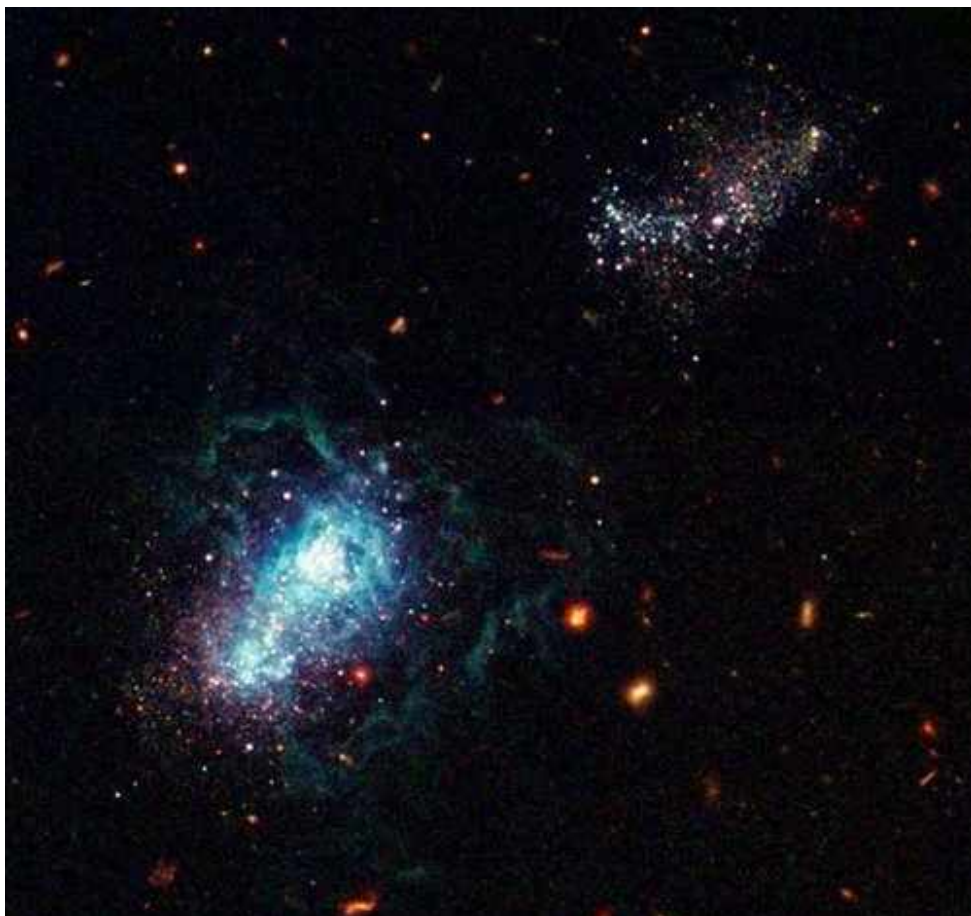
Eric C. Holland  
2502 Saint Augustine Ct  
Merced, CA 95340  
722-4279  
croessus@yahoo.com

*The M-STAR newsletter is produced  
and edited by Gary W. Walker  
(walkergw@elite.net)*

*A special THANKS goes to Richard  
Cloak for the monthly Calendar &  
Maps!*



Pegasus booster rocket ignites to send the X-43A on its record setting flight on Nov. 16, 2004. NASA photo



NASA's Hubble Space Telescope imaged what may be the youngest galaxy ever seen. Dwarf galaxy I Zwicky 18 (left) may not have begun active star formation until about 13 billion years after the Big Bang. A companion galaxy (right) may be interacting with it, triggering the "late bloomer's" star creation. NASA, ESA, Y. Izotov (MAO, Kyiv, UA) and T. Thuan (University of Virginia)



Stealing is a crime on Earth, but at Saturn, apparently it is routine. The Cassini spacecraft has witnessed Saturn's moon Prometheus snatching particles from one of Saturn's rings. (Dec. 3) NASA/JPL/Space Science Institute

Dear Colleagues,

I wish to announce the release of my book "[The Origin of Stars](#)". It is a readable text covering all aspects of star formation. I hope this book will appeal to astronomers and scientists wishing to expand their horizons, students seeking solid foundations, and general readers with enquiring minds.

Where do stars come from and how do they form? These are profound questions which link the nature of our Universe to the roots of mankind. Yet, until a recent revolution in understanding, the proposed answers have been speculative. Now, accompanying penetrating observations, a new picture has come into prominence.

This book presents the latest fascinating observations and scientific ideas covering star formation, star birth and their early development. It encompasses all aspects, from the dramatic stories of individual objects, to the collective influence of entire stellar systems. The very first stars to come into existence and the nurturing of planets are discussed to provide the reader with a comprehensive overview.

An accompanying Web-Gallery can be found at: <http://www.arm.ac.uk/~mds/Origin/origin.html>.

Receive a **15% discount** on your order if you buy direct from Imperial College Press. This promotion ends on 15 Dec, 2004. Just mention the discount code "**ICP353**". Do feel free to recommend this to a friend if you have found it useful.

Best Wishes,  
Michael Smith  
Armagh Observatory



## THE ORIGIN OF STARS

Pub. Date: October 2004

Pages: 264

ISBN: 1-86094-489-2 (Hardcover)

ISBN: 1-86094-501-5 (Softcover)

Web Site: <http://www.icpress.co.uk/books/physics/p353.html>

Chapter 1: Introduction

### Contents

- The Physics and Chemistry
- The Clouds
- Cloud Formation, Evolution and Destruction
- Turbulence
- The Collapse
- The Magnetic Mediation
- The Birth
- The Young Stars
- Jets and Outflows
- Massive Stars
- The Distributions
- Cosmological Star Formation

## *Join M-STAR and See the UNIVERSE*

*Membership terms are on an annual calendar from Jan. 1 through Dec. 31*

**Mail to: M-STAR Treasurer, 1136 N. Stratford Ave Atwater, CA 95301**

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Phone # \_\_\_\_\_  
e-mail \_\_\_\_\_  
Main Astronomical Interests: \_\_\_\_\_  
\_\_\_\_\_

*Membership Plan:*  
New \_\_\_\_\_ Renewal \_\_\_\_\_  
Family/Individual (\$15) \_\_\_\_\_  
Student, over 18 (\$10) \_\_\_\_\_  
Youth, under 18 (\$5) \_\_\_\_\_

# Season's Greetings!

 **M-STAR**   
**CLUB NEWSLETTER**

1812 N. Quinley Ave  
Merced, CA 95340

