



# 12 MONTH CALENDAR



*Commemorating the 12th anniversary  
of the launch of NASA's Spitzer Space Telescope with  
images & news highlights from a different year on every month*



Launches from Cape Canaveral, enters Earth-trailing orbit  
2003-08-25

Provides upper size limit for newly discovered minor planet Sedna  
2004-03-15

Detects raw ingredients for life in dusty disks around young stars  
2004-05-27



## September 2015

SUN	MON	TUE	WED	THU	FRI	SAT
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3

Spiral Galaxy Messier 81  
2003-12-18

The magnificent spiral arms of the nearby galaxy Messier 81 are highlighted in this early first-year Spitzer image. The proximity of M81, plus the spatial resolution & sensitivity of Spitzer at infrared wavelengths, allowed astronomers to study the anatomy of a spiral galaxy in detail.

NASA/JPL-Caltech/S. Willner (Harvard-Smithsonian Center for Astrophysics)



Captures light from planets around other stars for the first time  
2005-03-22

Spots signs of an asteroid belt around a Sun-like star  
2005-04-20

Finds organic ingredients for life existed over 10 billion years ago  
2005-07-28

## October 2015

SUN	MON	TUE	WED	THU	FRI	SAT
27	28	29	30	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

### Crab Nebula Supernova Remnant 2005-06-11

The Crab Nebula is the shattered remnant of a massive star that ended its life in a tremendous supernova explosion. In this view from Spitzer, the blue region traces the cloud of energetic electrons trapped within the remaining neutron star's magnetic field, while the yellow-red features are hot gases.

NASA/JPL-Caltech/R. Gehrz (University of Minnesota)



Identifies comet ingredients after NASA probe collides with comet  
2005-09-07

Teams with Hubble to find "big baby" galaxies in distant universe  
2005-09-27

Finds hints of new planet birth around a dead, exploded star  
2006-04-05



The Center of the Milky Way  
2006-01-10

Spitzer's view shows hundreds of thousands of stars crowded into the swirling core of our spiral Milky Way Galaxy. In visible-light pictures, this region cannot be seen at all because dust lying between Earth and the galactic center blocks our view.

NASA/JPL-Caltech/S. Stolovy (Spitzer Science Center/Caltech)

## November 2015

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5



First to decode exoplanet light, revealing details of the atmosphere

2007-02-21

Finds that planets are equally abundant around twin-star systems

2007-03-29

Creates first temperature "weather map" of an exoplanet

2007-05-09



## December 2015

SUN	MON	TUE	WED	THU	FRI	SAT
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2

### Helix Nebula

2007-02-12

Planetary nebulae are the remains of Sun-like stars that have died, puffing out their outer gaseous layers. In this Spitzer view, the bright red center is the glow of a dusty disk circling the hot core of the dead star. This dust was most likely kicked up by comets that survived the death of the star.

NASA/JPL-Caltech/K. Su (Univ. of Arizona)



Finds large amounts of dust in the winds blowing from black holes

2007-10-09

Detects organic gases & water vapor in stars' planet-forming regions

2008-03-13

Observes echoes in the light from a long-ago supernova

2008-05-29



## January 2016

SUN	MON	TUE	WED	THU	FRI	SAT
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

### Rho Ophiuchi Star-forming Region

2008-02-11

Newborn stars peek out from beneath their natal blanket of dust in this dynamic Spitzer infrared image of the Rho Ophiuchi dark cloud. Recent studies reveal more than 300 young stellar objects within the large central cloud, with a median age of only 300,000 years.

NASA/JPL-Caltech/Harvard-Smithsonian CfA



Discovers nearby planetary system has two asteroid belts  
2008-10-27

Observes young star creating silicate crystals, comet materials  
2009-05-13

Finds evidence for high-speed collision between two protoplanets  
2009-08-10



**Triangulum Galaxy**  
2009-04-03

One of our closest galactic neighbors shows its awesome beauty in this Spitzer image. Along with our own Milky Way, the Triangulum Galaxy is a member of what's known as our Local Group of galaxies, a gravitationally bound group traveling together in the universe.

NASA / JPL-Caltech

## February 2016

SUN	MON	TUE	WED	THU	FRI	SAT
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	1	2	3	4	5



Discovers enormous never-before-seen ring around Saturn  
2009-10-06

Unearths two primitive supermassive black holes  
2010-03-17

Finds buckyballs in space for the first time  
2010-07-22



### March 2016

SUN	MON	TUE	WED	THU	FRI	SAT
28	29	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2

Orion Nebula  
2010-04-02

Radiation & winds from hot young stars have sculpted and blown away surrounding dust. This image combines data from Spitzer and the Two Micron All Sky Survey (2MASS). The Spitzer data was taken after Spitzer's liquid coolant ran dry in May 2009, marking the beginning of its "warm" mission.

NASA/JPL-Caltech/J. Stauffer (SSC/Caltech)





Finds weird hot spot on exoplanet, on the side not facing the star

2010-10-19

Observes exoplanet, revealing it is the first-known carbon-rich world

2010-12-08

Detects crystals falling like rain in outer clouds of infant star

2011-05-26



### North America Nebula

2011-02-10

This nebula is named after its resemblance to the North America continent in visible light. This view combines both visible and infrared-light observations, taken by the Digitized Sky Survey and Spitzer, respectively, into a single vivid picture.

NASA/JPL-Caltech/L. Rebull (SSC/Caltech)/D. De Martin

### April 2016

SUN	MON	TUE	WED	THU	FRI	SAT
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



Detects bombardment of comets in nearby solar system  
2011-10-19

Finds buckyballs in space stacked together into solid form  
2012-02-22

Finds possible exoplanet smaller than Earth 33 light-years away  
2012-07-18



Sombrero Galaxy  
2012-04-24

Spitzer's infrared vision revealed that the Sombrero Galaxy is a flat disk made up of two portions. The inner disk is composed almost entirely of stars, with no dust. Beyond this is a slight gap, then an outer ring of intermingled dust and stars, seen here in red

NASA/JPL-Caltech

## May 2016

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4



Sees light from lonesome stars ejected from galaxies  
2012-10-24

Contributes to most-detailed "weather map" of a brown dwarf  
2013-01-08

Teams with Hubble to uncover mysterious "strobe light" young star  
2013-02-07



Zeta Ophiuchi Bow Shock  
2012-12-18

This massive star is traveling about 54,000 mph, fast enough to break the sound barrier in the surrounding interstellar material. Because of this motion, it creates a spectacular bow shock ahead of its direction of travel (to the left), as stellar winds flowing from the star make ripples in the dust.

NASA/JPL-Caltech

## June 2016

SUN	MON	TUE	WED	THU	FRI	SAT
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2



Works with Kepler mission to create first cloud map of an exoplanet

2013-09-30

Explains mystery of infrared light from planet-forming disks: magnetism

2014-03-06

Helps make the most precise measurement of an exoplanet's size

2014-07-23



### Eta Carinae Nebula/Milky Way

2014-03-20

The star Eta Carinae, more than 100 times as massive as our sun, is seen wreaking havoc on the surrounding clouds of gas and dust. This is one small cutout of an expansive 360-degree panorama of the Milky Way released by the GLIMPSE360 project. The full survey combines more than six months of observing time spanning 10 years, beginning soon after Spitzer's launch in 2003.

NASA/JPL-Caltech/GLIMPSE Team

### July 2016

SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						



Spots microlensing event, reveals planet deep within our galaxy

2014-04-14

Confirms discovery of nearest rocky exoplanet to our solar system

2014-07-30

Witnesses smashup between large asteroids around a young star

2014-08-28



## August 2016

SUN	MON	TUE	WED	THU	FRI	SAT
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3

### Monkey Head Nebula

2015-08-20

Scores of baby stars shrouded by dust are revealed in this star-forming region. The greens in the image show the organic molecules in the dust clouds, illuminated by starlight. Reds are caused by the thermal radiation emitted from the very hottest areas of dust.

NASA/JPL-Caltech