ALMA Opens Another Window on the Universe with Band 8 Receivers

ALMA has opened another window on the Universe as astronomers successfully used the new Band 8 receivers to observe the distribution of atomic carbon in a planetary nebula dubbed NGC 6302. The receivers were developed by the National Astronomical Observatory of Japan (NAOJ).

http://www.nrao.edu/pr/2013/band8/

Starbirth Surprisingly Energetic: ALMA observations give new insights into protostars

While observing a newborn star, astronomers using the Atacama Large Millimeter/submillimeter Array (ALMA) telescope discovered twin jets of matter blasting out into space at record-breaking speed. These surprisingly forceful molecular "winds" could help refine our understanding of how stars impact their cloudy nurseries and shape their emerging stellar systems.

http://www.nrao.edu/pr/2013/hh4647/

Starburst to Star Bust: Astronomers ID suspect behind dearth of high-mass galaxies

Astronomers using the new Atacama Large Millimeter/submillimeter Array (ALMA) telescope have discovered billowing columns of cold, dense gas fleeing the disk of nearby starburst galaxy NGC 253, also known as the Silver Dollar Galaxy. Located 11.5 million light-years away in the constellation Sculptor, this galaxy -- with its slightly askew orientation -- offers astronomers an uncommonly clear view of several super star clusters near its center. These clusters denote areas where new stars are forming and they also mark the starting point for material being ejected from the galaxy.

http://www.nrao.edu/pr/2013/starburst-bust/

Snow Falling around Infant Solar System: Icy region gives planet and comet formation a boost

Astronomers using the new Atacama Large Millimeter/submillimeter Array (ALMA) telescope have taken the first-ever image of a snow line in an infant solar system. This frosty landmark is thought to play an essential role in the formation and chemical make-up of planets around a young star.

http://www.nrao.edu/pr/2013/snowline/

'Dust Trap' around Distant Star May Solve Planet Formation Mystery

Based on a treasure trove of recent discoveries, astronomers now know that planets are remarkably plentiful in our galaxy and may be common throughout the Universe. Though planets appear to form readily, the actual process of planet formation remains a mystery and astronomers are searching for the missing pieces to this cosmic puzzle.

http://www.nrao.edu/pr/2013/dusttrap/

ALMA Detects Signs of Star Formation Surprisingly Close to Galaxy's Supermassive Black Hole

Astronomers using the Atacama Large Millimeter/submillimeter Array (ALMA) have discovered signs of star formation perilously close to the supermassive black hole at the center of the Milky Way Galaxy. If confirmed, this would be the first time that star formation was observed so close to the galactic center.

http://www.nrao.edu/pr/2013/protostar/

ALMA Finds 'Monster' Starburst Galaxies in the Early Universe

Astronomers using the Atacama Large Millimeter/submillimeter Array (ALMA) telescope have discovered starburst galaxies earlier in the Universe's history than they were previously thought to have existed. These newly discovered galaxies represent what today's most massive galaxies looked like in their energetic, star-forming youth. The research is the most recent example of the discoveries coming from the new international ALMA observatory, which celebrates its inauguration today.

http://www.nrao.edu/pr/2013/highz/

ALMA Shows How Young Star and Planets Grow Simultaneously

Astronomers have used the ALMA telescope to get their first glimpse of a fascinating stage of star formation in which planets forming around a young star are helping the star itself continue to grow, resolving a longstanding mystery. The young system, about 450 light-years from Earth, is revealing its complex gravitational dance to the ever-sharpening vision of the Atacama Large Millimeter/submillimeter Array (ALMA), scheduled for completion this year.

http://www.nrao.edu/pr/2013/protogap/

Powerful Supercomputer Makes ALMA a Telescope

One of the most powerful calculating machines known to the civilian world has been installed and tested in a remote, high-altitude site in the Andes Mountains of northern Chile, marking one of the major remaining milestones toward completion of the most elaborate ground-based telescope in history, the Atacama Large Millimeter/submillimeter Array (ALMA).

http://www.nrao.edu/pr/2012/almacorrelator/

Final North American ALMA Antenna Delivered

After an odyssey of design and construction stretching across more than a decade, North America has delivered the last of the 25, 12-meter-diameter dish antennas that comprise its share of antennas for the international ALMA telescope. This is an important milestone in the construction of an observatory that astronomers are already using to open up a "final frontier" of the spectrum of invisible light to high-resolution exploration.

http://www.nrao.edu/pr/2012/alma25/

ALMA Reveals Workings of Nearby Planetary System

A new observatory still under construction has given astronomers a major breakthrough in understanding a nearby planetary system that can provide valuable clues about how such systems form and evolve. The scientists used the Atacama Large Millimeter/submillimeter Array (ALMA) to discover that planets orbiting the star Fomalhaut must be much smaller than originally thought.

http://www.nrao.edu/pr/2012/fomalhaut/

First Images from ALMA

The detailed views of star-formation in the Antennae Galaxies are the first astronomical test images released to the public from the growing Atacama Large Millimeter/submillimeter Array (ALMA) and confirm that this new telescope has surpassed all others of its kind.

http://www.nrao.edu/pr/2011/almafirstpics/

ALMA Opens Its Eyes

Thousands of scientists from around the world competed to be the first few researchers to explore some of the darkest, coldest, farthest, and most hidden secrets of the Cosmos with this new astronomical tool.

http://www.nrao.edu/pr/2011/almaearlysci/