RAD EXPEDITION

ALMA & CCAT 2015: EXPLORING THE BEGINNING OF THE UNIVERSE

"THE PAST IS NEVER DEAD.
IT'S NOT EVEN PAST."

WILLIAM FAULKNER

FRIDAY 17,
SATURDAY 18
AND SUNDAY 19
OF APRIL.

Crédito: ESO/José Francisco Salgado (josefrancisco.org)

ORGANIZED BY RAD* Associated Universities, Inc. Chile CCAT

ENDORSED BY CEAL Consejo Empresarial de América Latina

SUPPORTED BY Chile

"Exploring the Beginnings of the Universe" is an expedition planned byAssociated Universities, Inc. (AUI) and RAD, endorsed by The Latin American Business Council (CEAL) with the support of Fundación Imagen de Chile.

AUI is a non-profit American corporation devoted to encourage the development of Astronomy all over the world and to have a much more scientifically illustrated society. Through a cooperative agreement with the National Science Foundation, AUI runs the National Radio Astronomy Observatory. In Chile, AUI is responsible for the North American division of the ALMA observatory, and also for the CCAT future observatory. Dr. Ethan Schreier is the chairman of AUI´s board.

RAD was created in 2010 in association with Universidad del Desarrollo. It's mission is to connect, inspire and support the current and future leaders of Chile, so that interactions between them may foster new ideas, that radically improves our lives. We design unique experiences of intellectual mobilization. In these years we have made expeditions in Chile and abroad, laboratories, talks, lectures, conferences and the Intelligence Squared debates. Today RAD is an independent and non-profit organization supported by Arauco, Entel, Aguas Andinas, Telefónica, Grupo Copesa, VTR, ALTIS, Godelius and Kibernum. Mr. Jorge Lesser G-H is the chairman of RAD´s board.

The Latin American Business Council -CEAL- was created 25 years ago and is comprised by more than 600 prominent business leaders from Latin America. Our main goal is to create business opportunities that strengthen mutual ties and drive socioeconomic progress in our regions and nations. CEAL aims to encourage private sector participation as an agent of change.

The current chairman of the Chilean chapter is Mr. Jorge Errázuriz Grez.

Crédito: AUI/NRAO, Carlos Padilla.

Fundación Imagen de Chile is a public-private foundation that develops and promotes the Chile brand strategy.

In order to enhance the image of the country oversees and increase its awareness, the entity aims that the nation's brand is adopted as an inclusive, cross-sector policy, so it is represented in all key sectors in charge of international promotion, in order to convey a unified message about Chile to the world, a message that represents aspects of our identity and to which all Chileans relate.

The foundation also defines the activities that helps the country to reach a wider international audience with greater impact.

The chairman of the Board is the Minister of Foreign Affairs. Other members of the Board are private sector representatives.

Crédito: AUI/NRAO, Carlos Padilla.

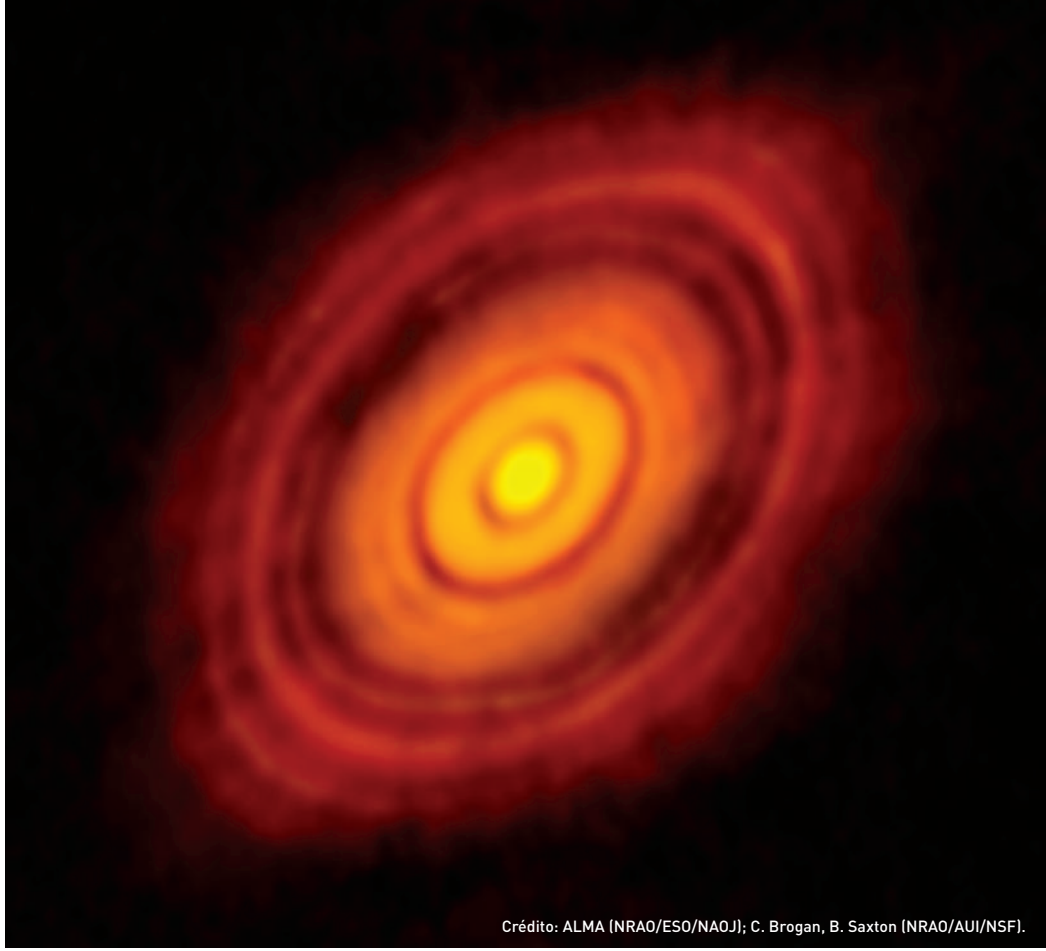
At the Chajnantor plain in Chile, 66 antennas are now looking up to the sky, 5.000 meters above the sea level, in one of the most desolated places of the planet.

That's ALMA, the biggest astronomic site ever, unveiling the amazing mysteries of the Universe today, after 20 years of development and US 1,300 million dollars invested.

At its full power, ALMA observes stunningly distant astronomical wonders, whose electromagnetic signals are now visible, after travelling hundreds and almost thousands of millions of years.

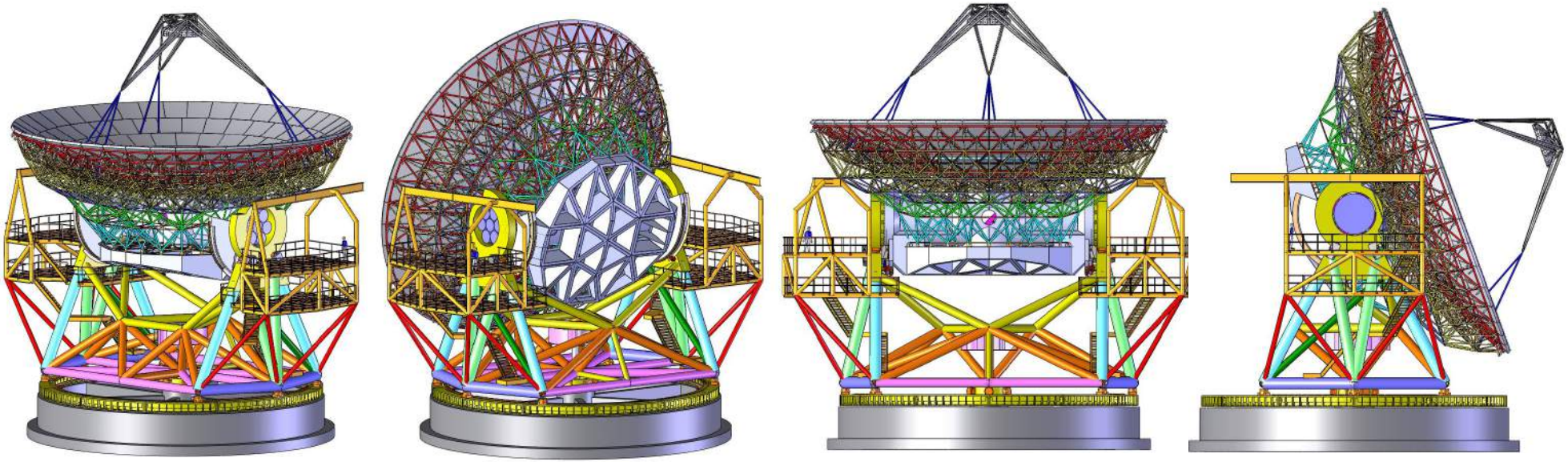
Scientists are somehow trying to recreate our faraway past to answer questions regarding the beginning of the Universe and life itself.

Crédito: NRAO/AUI/NSF; ALMA (ESO/NAOJ/NRAO); HST: NASA, ESA, y B. Whitmore (STScI).



Crédito: ALMA (NRAO/ESO/NAOJ); C. Brogan, B. Saxton (NRAO/AUI/NSF).

ALMA is producing science since October 2011, and keeps proving its huge strength. ALMA's images, created by integrating weak electromagnetic signals in wavelengths of 0,3 and 9,6 millimetres captured by the antennas, have recently provided astonishing discoveries like the most detailed picture ever seen of the planetary genesis in our own galaxy, interesting clues of massive star formation and proof of galactic fusion in the farthest Universe.



Crédito: CCAT.

The CCAT project will be located 600 meters up the ALMA antennas site, at the top of Chajnantor hill. The CCAT is the most precise submillimeter antenna ever designed, with a 25 meters wide parabolic dish that will search the sky in millimeter and submillimeter wavelengths, to provide an unprecedented combination of sensibility across a broad visual field.

Crédito: AUI/NRAO, Carlos Padilla.

CCAT and ALMA will be complementary. ALMA will explore very small areas of the sky with an unusual space resolution, while the CCAT, a research instrument, will access thousands of times wider areas, but with less space resolution. Together, doing what the other can´t, these telescopes will search for the remains of our cosmic origins, from the solar system up close to the Big Bang.

From Chile, the world is now exploring the birth of the Universe at high speed to provide answers for the new challenges that science is facing today.

In this expedition, we want you to be a part of this exciting astronomic race.

Crédito: AUI/NRAO, Carlos Padilla.

We'll visit ALMA's operations building, we'll ascend to the antennas 5000 meters high site, and we will observe with our own eyes (no telescopes) the details our Universe has to offer, guided by one of Chile's Exact Sciences National award winners.
But what really defines **RAD expeditions** is not where or what, but especially with whom.

- Two Chile's Exact Sciences National award winners.
- Two of the United States most celebrated astronomers.
- The President of one of the high-ranked astronomic organizations worldwide.

SPEAKERS 2015

Dr. Pierre Cox
ALMA Director

He is an expert in radio astronomy and was connected to ALMA when it was merely an idea. Starting from April 2013 he became the new director for the Observatory and will explain to us how and for what it was built.

Dr. Martha Haynes
Goldwin Smith Professor of
Astronomy, Cornell University
Associated Universities Inc. Director

Dr. Haynes is an expert in Radioastronomy and a great ALMA promoter. One of her main research fields is identifying dark galaxies that can be seen by optical telescopes, formed by "dark matter" and no stars. She is member of the US National Academy of Sciences and recently served as Vice President of the International Astronomical Union

Dr. María Teresa Ruiz
Chile's Exact Sciences National Winner

Former Sub Director of FONDAP Astrophysics Centre, today she's the Director of CATA (Centre for the excellence in astrophysics and associated technologies). Vice President of the Chilean Science Academy at the Institute of Chile, Honorary Member of the American Astronomical Society and Vice President of Women Community. She's also an active member of both national and international committees related to science, education and culture.

Dr. Riccardo Giovanelli
Professor of Astronomy, Cornell University
Director and Initiator, CCAT project

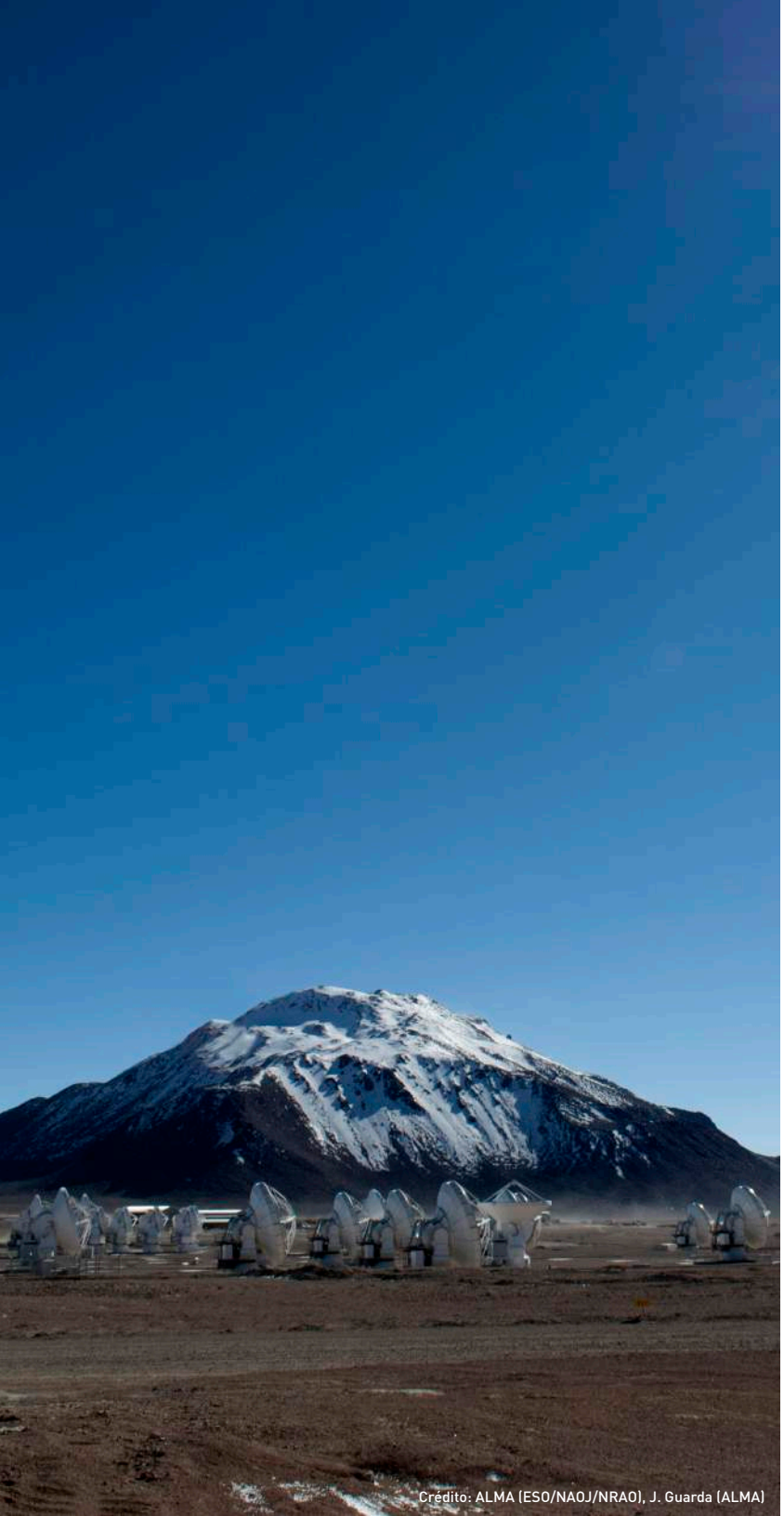
Dr Giovanelli's main research field is the structure and evolution of galaxies. In 1989 he was awarded the Draper Medal "for his contributions to Cosmological Physics" by the U.S. National Academy of Sciences and was knighted by the President of Italy in 1997 for his scientific merits.

Dr. Ethan J. Schreier
President, Associated Universities, Inc.
Adjunct Professor. Johns Hopkins University

Dr. Schreier spent 20 years as a tenured astronomer at the Space Telescope Science Institute, which conducts the science program of the Hubble Space Telescope, where he was director of operations. He previously had been a Senior Scientist at the Harvard-Smithsonian Centre for Astrophysics. Dr. Schreier's research has focused on the study of neutron stars, black holes, and active galaxies, using a variety of space and ground-based observatories.

Dr. José Maza
Astronomer
Chile's Exact Sciences National Winner

A living legend in Chilean astronomy, his contribution to the effort of measuring the expansion rate of the Universe is essential and, together with two other Chilean researchers, was acknowledged by the Royal Swedish Academy when giving the Nobel Prize in Physics 2011 to two North American scientists' teams.


Crédito: ALMA (ESO/NAOJ/NRAO), J. Guarda (ALMA)

WHEN, WHERE, HOW

FRIDAY 17TH , SATURDAY 18TH AND SUNDAY 19TH APRIL 2015

For information and booking, please contact:

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www.radchile.cl
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