ALMA takes Taiwan astronomy to new heights. -- 10/30/2011  "Taiwan Today"  
Taiwan has succeeded in leading eight of the first 112 projects to use the Arecibo Large Millimeter Array (ALMA), the world's largest and most advanced astronomical observatory complex, according to the nation's top research institution Academia Sinica Oct. 25.

MOEA deputy minister calls for Taiwan-EU economic pact 10/20/2011  "Taiwan Today"  
The European Union should reach an economic cooperation agreement with Taiwan to capitalize on the country's significant role in Asian economies, Deputy Minister of Economic Affairs Lin Sheng-hung said Oct. 25.

Presidential pose  
Laughter fills the air as ROC President Ma Ying-jeou's campaign headquarters pose with a cardboard cutout of his likeness Oct. 25 in Taichung City, central Taiwan. (CNA)

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ALMA takes Taiwan astronomy to new heights

Taiwan has succeeded in leading eight of the first 112 projects to use the Atacama Large Millimeter/submillimeter Array (ALMA), the world’s largest and most advanced astronomical observatory complex, according to the nation’s top research institution Academia Sinica Oct. 25.

"Taiwan’s participation in the ALMA project is the culmination of the development of the radio astronomy program in Taiwan," said Paul Ho, director of the academy’s Institute of Astronomy and Astrophysics (ASIAA). "Taiwan’s success is the result of its long term dedication and commitment to ALMA."

Among the accepted Taiwanese projects, ASIAA Associate Research Fellow Lee Chin-fei and his team will use ALMA to map a jet from a baby star in Orion, in order to measure its rotation and to confirm its role in removing excess angular momentum in star formation," according to Academia Sinica.

"ALMA is a perfect tool to study the jets because of its unprecedented high angular resolution and sensitivity," Lee said, adding that the sensitivity of the observatory exceeds that of all other telescopes of its kind. He compared the power of ALMA to being able to clearly see a penny atop Taipei 101 from Kenting at the southernmost tip of Taiwan.

A proposal by ASIAA Assistant Research Fellow Wang Weihao to use ALMA to observe two gamma-ray burst host galaxies in the early universe was also selected. "ALMA can detect the very faint submillimeter light from the gamma-ray burst host galaxies," Wang said.

"This will help us to understand how fast the galaxies are forming young and massive stars, which is a fundamental property of a galaxy," he explained. "Once we have clearer ideas about the connection between the properties of the host galaxies and the bursts, we can make better use of gamma-ray bursts to probe galaxies in the most distant and early universe."

According to Academia Sinica, ALMA is an international partnership among Chile, Europe, North America and East Asia. Situated at an elevation of 5,000 meters in Chile, the observatory will be completed in 2013 with 66 radio antennas.

"When the whole array has been set up, it will provide angular resolution of 5 milli-arc-seconds, giving 10 times sharper images than the Hubble Space Telescope, allowing us to observe the universe in the earliest time at high resolution."

Academia Sinica is a collaborator with Japan on the East Asia team, while Taiwan’s National Science Council is part of the North American team. Working with local industry, the Taiwan team has contributed both hardware and software to the construction of ALMA. (THN)

Write to Taiwan Today at tonline@mail.gio.gov.tw
世界最高性能の「アルマ望遠鏡」、台湾の研究計画を採用

発信日時：10/25/2011

世界最大、最高性能の電波望遠鏡「アルマ望遠鏡」が先ごろ、初期観測を開始した。まちなく本格的な研究観測を開始するべく、申請を受けていた各国からの科学観測計画のうち、台湾の研究チームによる計画が採用された。

アルマ望遠鏡の正式名称は「アカラマ大型ミリ波サブミリ波干渉計」、日本を含む12カ国が出資と建設に関与している。科学観測計画は世界から約800のチームが応募、承認されたのは112チームだった。採用された台湾チームの計画は全体の7%を占め、採用率は相当高い。中央研究院院长（中研院）は説明した。

アルマは2013年の竣工時には65台のパラボラアンテナを組み合わせて観測・研究を行う予定で、現在22台の設置が完了している。中研院によると、その性能は現在の天体望遠鏡の性能を超え、ハッブル宇宙望遠鏡の10倍に匹敵。台湾南部の墾丁から台北のビル頂上の1台台を観測できるほどの解像度を備えるという。

台湾の研究チームはまた、アカラの受信機のフロント・エンド部のシステムの検査を担当、核心技術に貢献している。中研院によると、中研院と国防省高儀局中山科学研究院、行政院科技開発、製造した「フロント・エンド・サービス・ビクアール（FESV）」2台が、海抜5,000メートルの高地という過酷な環境でアルマ望遠鏡の機器のメンテナンスを行う。