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Press release

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Stellar occultation by asteroid Ultima Thule in Senegal: an opportunity to promote astronomy in Africa

On the night of 3–4 August 2018, American, French and Senegalese scientists will be in Senegal to observe as asteroid Ultima Thule (2014 MU₆₉) passes between Earth and a distant star, a phenomenon called stellar occultation, before NASA's New Horizons spacecraft performs a flyby of this object on 1 January 2019. This observation campaign involves researchers from CNRS, the French national scientific research centre, and the IRD development research institute, with financial support from CNES and the French Embassy in Senegal. The campaign is a chance to promote science culture and raise public awareness around an astronomical event of global interest.



Successfully launched on 19 January 2006, New Horizons returned unprecedented images of the planet Pluto and its moons in 2015. Today, the probe is continuing its voyage to the far edges of the Solar System. On 1 January 2019, it will fly by asteroid 2014 MU₆₉ at a distance of approximately 6 billion kilometres from Earth (more than 40 times the distance between the Earth and Sun).

On 3 June 2017, when 2014 MU₆₉ passed in front of a star — a phenomenon called stellar occultation — two NASA teams took the chance to learn more about the asteroid. This occultation was visible in Argentina and South Africa. Their observations suggested that the celestial body has an elongated shape, or could be a binary of two objects rotating around each other.

On the night of 3–4 August 2018, another stellar occultation by 2014 MU₆₉ will take place, which will be visible in West and North Africa and part of South America (Colombia). NASA has chosen

Senegal and Colombia as an opportunity to gather more information about this object, before the final flyby in January.

His Excellency Macky Sall, President of Senegal, has given his approval for this mission and has delegated the organization and coordination of activities in Senegal to the country's Ministry of Higher Education, Research and Innovation.

The teams of observers in Senegal will include American, Senegalese and French researchers, split into groups of three at 21 sites between Thiès, Diourbel and Louga. Their goal is to measure the duration of the occultation at different points and, in turn, determine the asteroid's shape.

The observers will work closely with scientists at various Senegalese universities and research centres (including [ISRA](#), the [CSE](#), the [ANACIM](#) and the [ANAT](#)) and the Senegalese Association for the Promotion of Astronomy (ASPA). The seven French observers are from the Paris Observatory, the Midi-Pyrenees Observatory (CNRS / IRD / University of Toulouse III – Paul Sabatier / Météo France), CNRS, the IRD institute and the Cité des Sciences et de l'Industrie in Paris. Their involvement in this mission is supported by CNES, France's national space agency, and the European Research Council (ERC) Lucky Star project group, led by Bruno Sicardy of the LESIA space and astrophysics instrumentation research laboratory (CNRS / Paris Observatory / Sorbonne University / Paris Diderot University).

This event coincides with recent efforts to develop astronomy in Africa, such as the Africa Initiative for Planetary and Space Sciences (<https://africapss.org/>). Various activities to promote astronomy will be organized in Senegal, including science outreach events in various cities to observe the lunar eclipse on 27 July and a public lecture at Cheikh Anta Diop University ([Khaly Amar Fall Auditorium](#)) on 30 July.

These events are organized with the support of the Senegalese Ministry of Higher Education, Research and Innovation, the French Embassy in Senegal, the IRD development research institute, the American Embassy in Senegal and the Uranoscope in France.

For Senegal's research community, the event will be a chance to forge new ties with American and French research centres and, in turn, pursue new projects in space to support economic and scientific development in Senegal and Africa more broadly.

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To learn more:

- Outdoor science outreach events in Dakar, Thiès, Saint-Louis and Bambey on Friday 27 July to observe the lunar eclipse
- Public lecture and chance to meet researchers on Monday 30 July, 3:00 to 6:30 p.m. at Cheikh Anta Diop University in Dakar (Khaly Amar Fall Auditorium)
- Contact africapss.org for last-minute information

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