

ClimCam

Strengthening Africa's participation in the space economy through ISS-based climate monitoring

Three emerging space nations reached orbit without buying a satellite — and without waiting their turn.

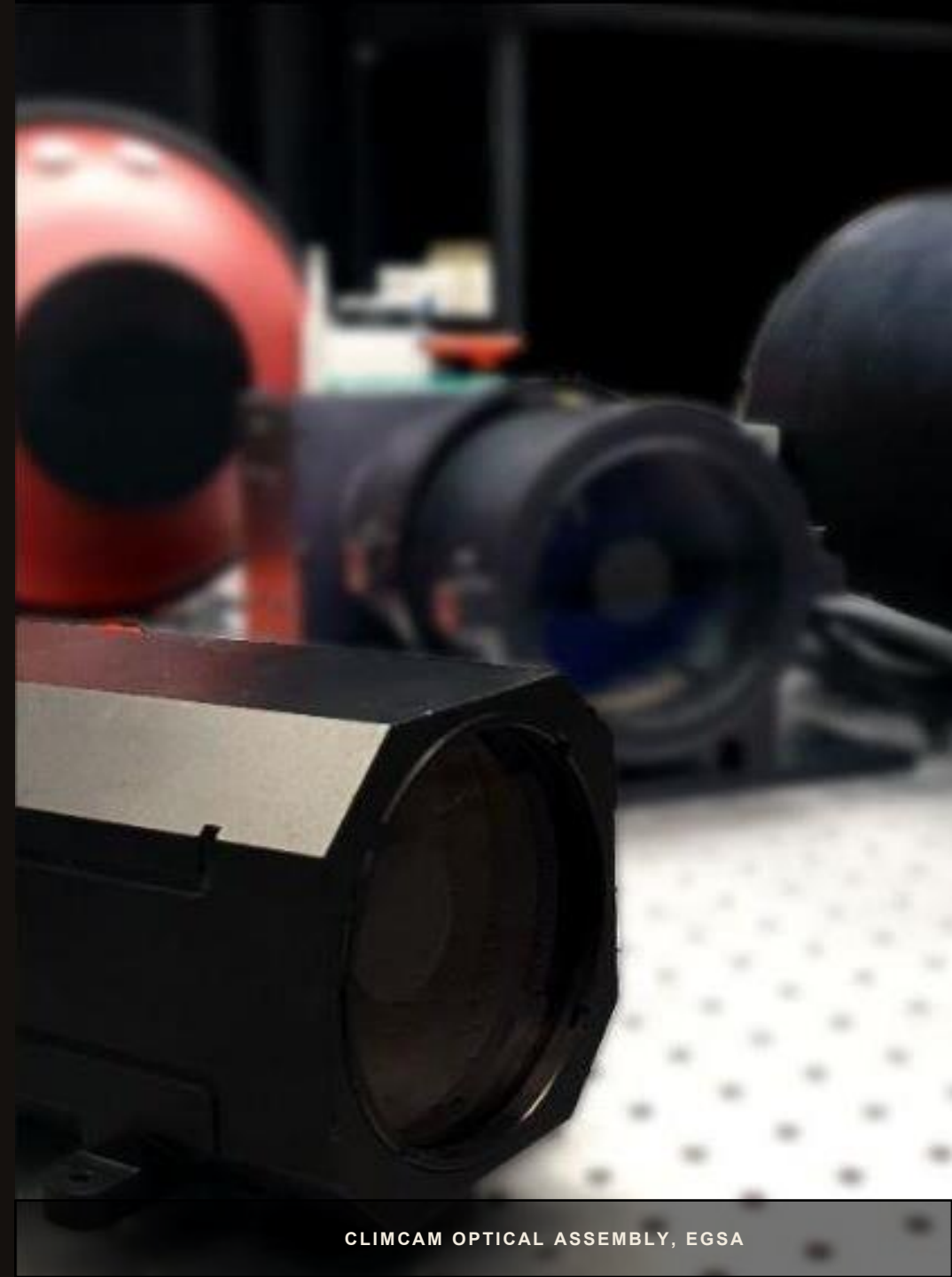
EGYPTIAN SPACE AGENCY · KENYA SPACE AGENCY ·
UGANDA NATIONAL SPACE PROGRAMME

In partnership with UNOOSA and Airbus Defence and Space, under the Access to Space for All initiative

33rd UN/IAF Workshop on Space Economy Opportunities for Emerging Nations

Session 3 — Cooperation as capacity-building and ecosystem development tool

Antalya, Türkiye · 4 October 2026



CLIMCAM OPTICAL ASSEMBLY, EGSA

Owning the data usually means owning a satellite.

East Africa faces growing risks from floods, droughts, and pressure on food and water systems. Managing these risks requires timely, regional Earth observation. The conventional route to it is a national satellite programme.

CAPITAL



Building and launching a complete satellite requires significant capital investment.

Build-and-launch budgets compete directly with the national services the data is meant to serve.

SCHEDULE



Climate risk does not wait for a decade-long programme.

Building an entire satellite alone is “expensive, complicated and time-consuming” for an emerging space nation.

FLIGHT HERITAGE



Without a flown system, you cannot prove you can fly one.

Many African countries cannot yet reach TRL 9 — flight-proven technology — and stay locked out of the next mission.



Gain access to orbit. Own the instrument.

The ISS is already in orbit, already powered, already serviced. Airbus's **Bartolomeo** platform on the external shell of the European Columbus module hosts payloads from 3U upwards — and UNOOSA opened one slot, free of charge for one year, to a UN Member State.



Three African agencies are progressing together.

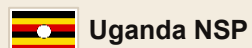
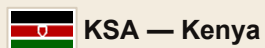
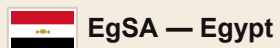
This was the first international cooperation between Egypt, Kenya and Uganda in a single consolidated consortium, one shared design authority, one set of ISS requirements.

Egyptian Space Agency — project lead

Assembly, integration and testing. Cairo facilities provided the infrastructure for end-to-end development and validation, making Egypt the technical hub of the payload.

Kenya Space Agency and Uganda National Space Programme

Active participation of their technical staff across the mission lifecycle, including the design, development, testing, and delivery phases.



SYSTEM INTEGRATION, EGSA-CAIRO

A 2.7 kg camera doing a satellite's job.

10 m



Ground sampling distance, from roughly 400 km altitude

4×



Imaging opportunities over East Africa per day

2.7 kg



Payload mass, hosted for a one-year mission

1 Mbps



Downlink to the POMA ground station in Uganda and EgSA

MISSION REQUIREMENTS AS FLOWN

- Daily colour imaging of at least **20 km²** over East Africa
- A minimum of **one image per day** across a one-year mission
- Onboard **machine-learning** processing — the first such camera system on the ISS
- Mounted via the **ArgUS** multi-payload adapter on Bartolomeo, external to Columbus



ClimCam flight model, pre-integration



11 April 2026

Cygnus NG-24 resupply mission, launched by Falcon 9 from Space Launch Complex 40, Cape Canaveral Space Force Station, at 11:41 UTC.



NG-24 liftoff · Falcon 9 · 11 Apr 2026

What has already been proven — before the first image

Qualification



An African-designed payload passed ISS safety and interface qualification — assembled and tested in Cairo, validated end-to-end at Airbus in Houston.

Flight heritage



Three agencies now hold heritage on a system operating in orbit — the credential that unlocks eligibility for the next mission.

A working consortium



A tri-national engineering process that survived four years, a pandemic and a schedule change — and is still intact.



Joint team training, Egyptian Space Agency

06 / THE REAL DELIVERABLE

The payload flies for a year. The engineers stay.

The hosting opportunity is temporary. The capability, knowledge, and infrastructure developed through it are lasting.

5–10



engineers per country worked the full development cycle — optics, mechanics, electronics, and software designed in-house, not procured.

TRL 9



Not a first flight, but a step forward in proven African space capability.

Labs



Infrastructure exercised — EgSA's Cairo facilities took a payload end-to-end development.

Five steps, in this order.

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|---|--|--|---|
| 1 | Start from a national problem, not a space ambition | Ours was climate risk to food and water security — a problem our governments already funded answers to. That framing is what lets a space project survive a budget cycle, and it is what selection panels reward. |  |
| 2 | Find neighbours with the same problem | A tri-national bid beat single-country proposals. Shared exposure to the same hazard is a stronger basis for partnership than shared language or politics — and it makes the data useful across the whole footprint. |  |
| 3 | Use an existing platform for your first flight | Hosted payload opportunities — Bartolomeo, KiboCUBE, CubeSats with Vega-C and others under Access to Space for All — take the launch and the satellite bus off your critical path. |  |
| 4 | Keep the engineering in-house, buy the review | Procuring the payload delivers hardware and no capability. Design it yourself, and pay — in effort — for an industrial partner's standards and review discipline. |  |
| 5 | Name the receiving institution before launch | Decide which ministry or authority will act on the data, and wire the ground segment to it early. A mission with a named user produces decisions. |  |

From hosted payload to owned mission.

ClimCam was never meant to be the destination. It was the qualification round — the mission that makes the next, more independent mission credible to our own treasuries.

NEAR TERM



Operate the year, and prove the data chain

Commission, image daily, downlink through ground station, and demonstrate products reaching national disaster, agriculture and water institutions in all three countries.

NEXT MISSION



AfDevSat — a continental step up

The African Development Satellite initiative widens the model to six countries — Egypt, Ghana, Kenya, Nigeria, Sudan and Uganda — stepping up to a jointly developed satellite.

THE SHIFT



From data user to data producer

The strategic outcome is ownership: African institutions co-owning the systems that generate their environmental data, rather than consuming it from elsewhere.

Access to space can be borrowed. Capability has to be built.

- ✓ Three emerging space nations reached orbit by **renting the vantage point and owning the instrument.**
- ✓ The durable products are **flight heritage, trained engineers and a working consortium** — not the imagery alone.
- ✓ The model is replicable, and **it is available to you** through Access to Space for All.

“This project represents the first international cooperation between the three African countries in a consolidated consortium to face one of the most challenging threats the region ever faced.”

Ayman Mahmoud Ahmed, ClimCam Project Coordinator, Egyptian Space Agency

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PROJECT

ClimCam
EgSA · KSA · Uganda NSP

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