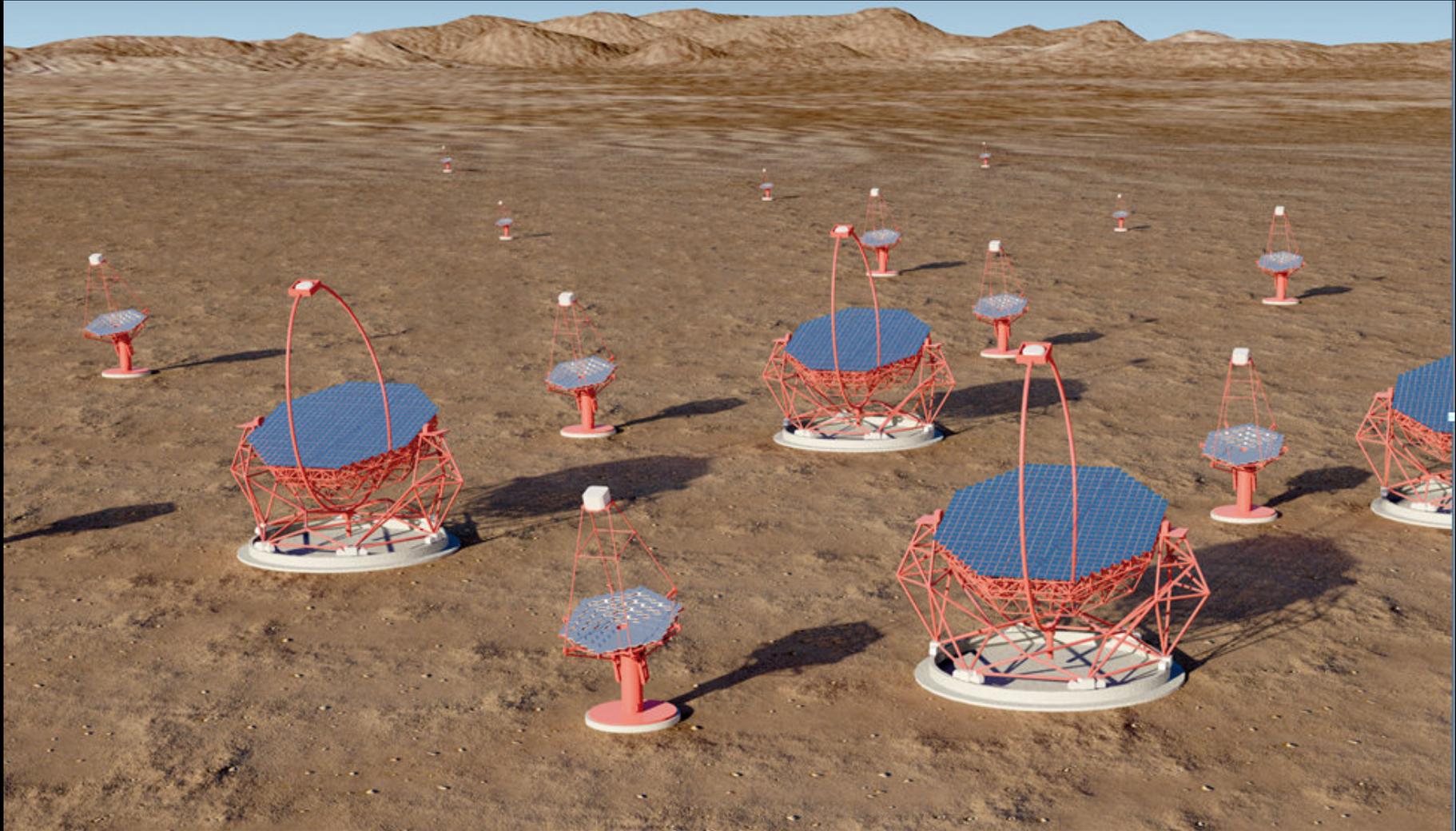


The Cherenkov Telescope Array



Candidate Sites

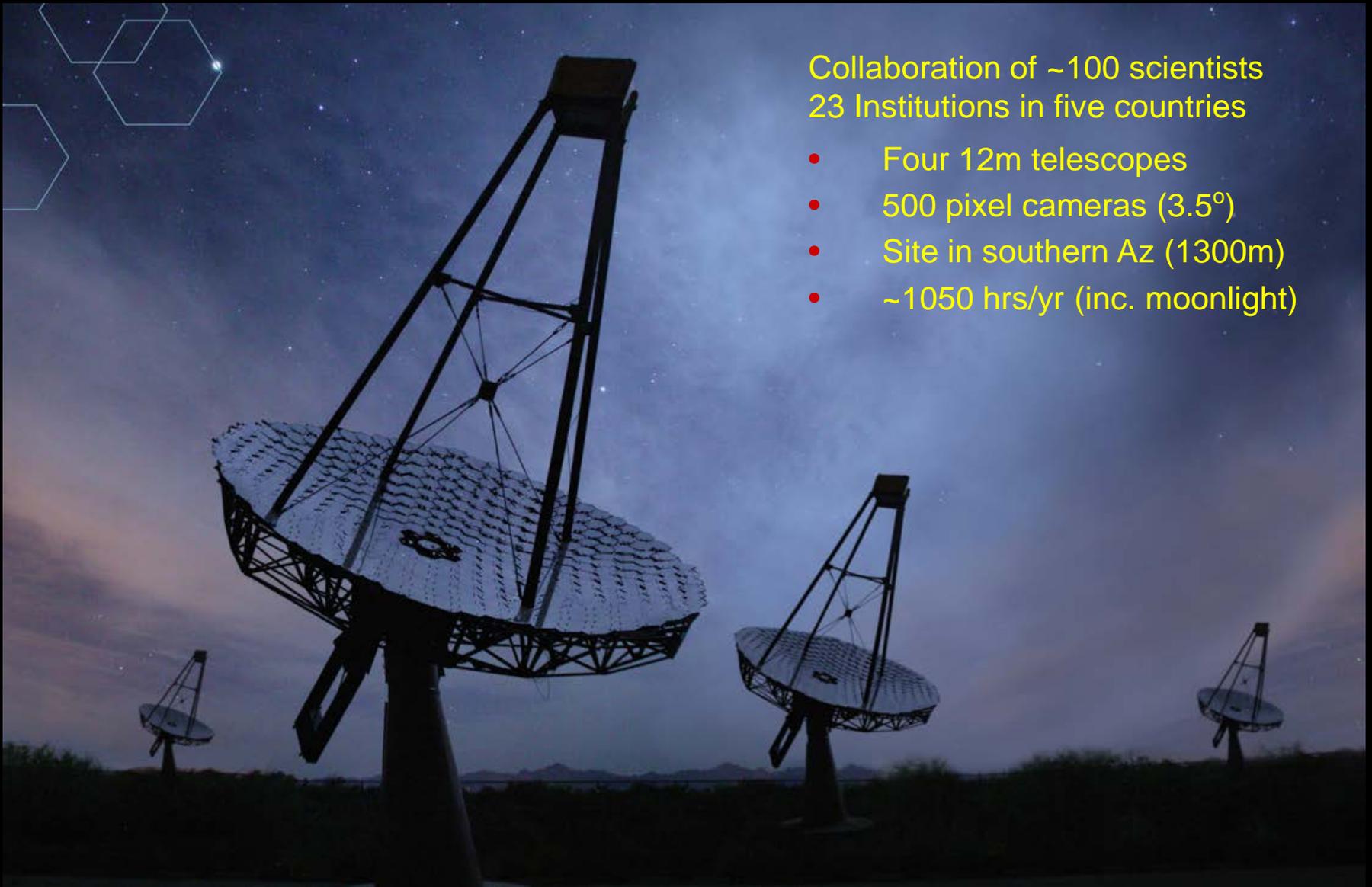
One observatory with two sites - operated by one consortium



Example Telescope Array: VERITAS

Collaboration of ~100 scientists
23 Institutions in five countries

- Four 12m telescopes
- 500 pixel cameras (3.5°)
- Site in southern Az (1300m)
- ~1050 hrs/yr (inc. moonlight)



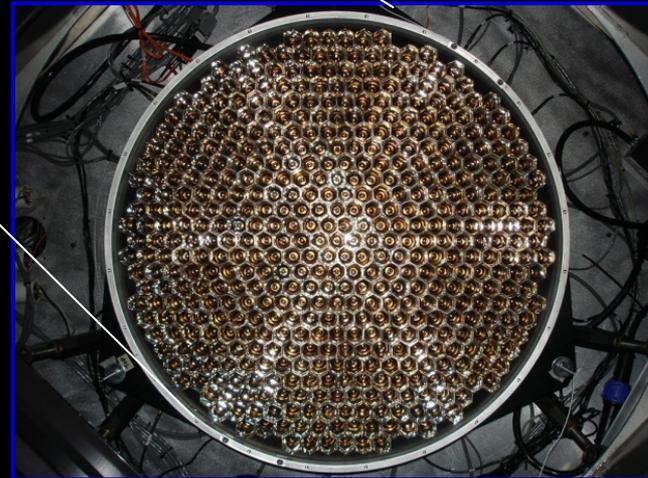
A VERITAS Telescope



12m reflector, f1.0 optics

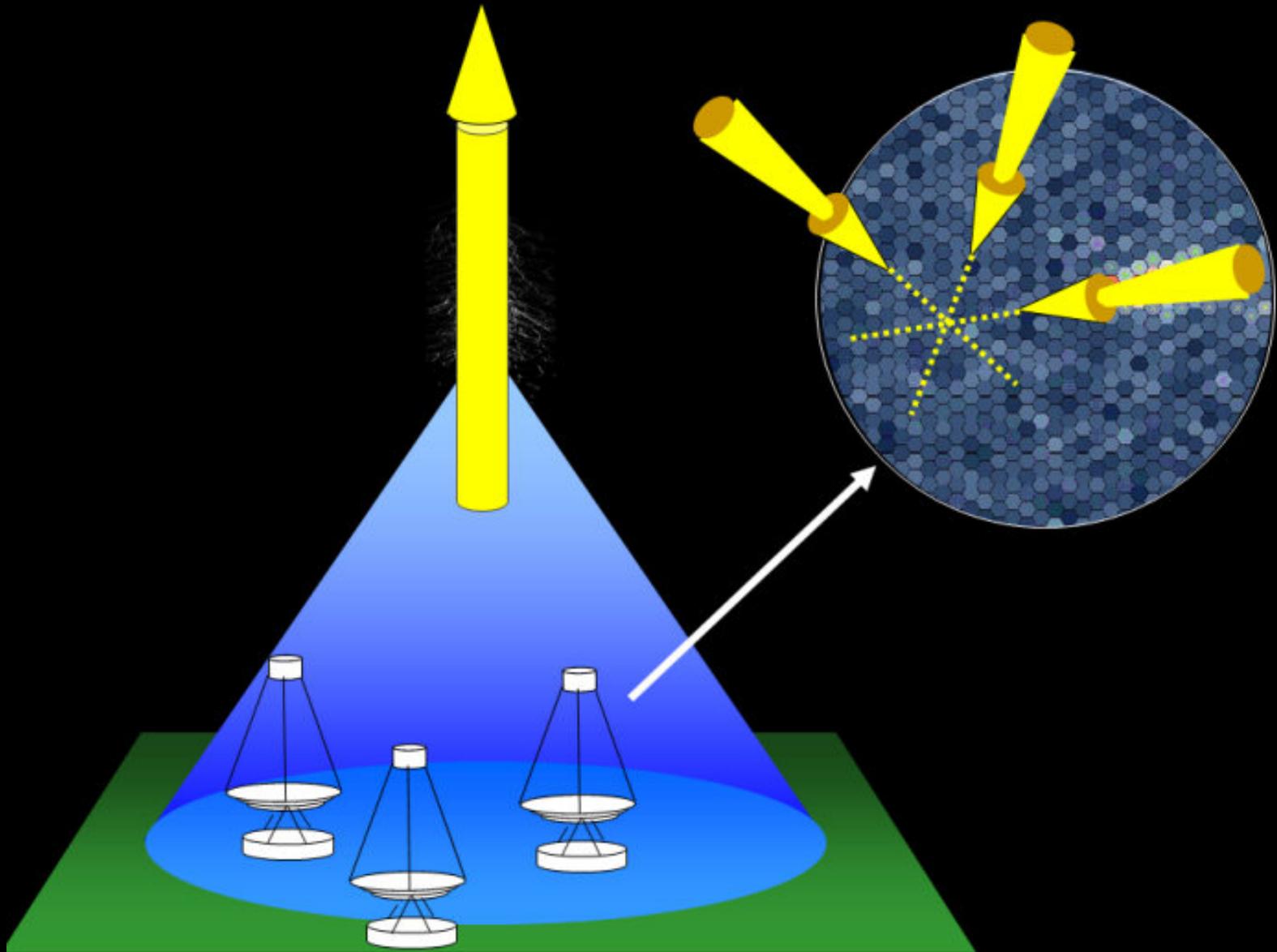


350 Mirror Facets



500 pixel Camera

Observing Cherenkov Radiation



CTA-North Telescopes

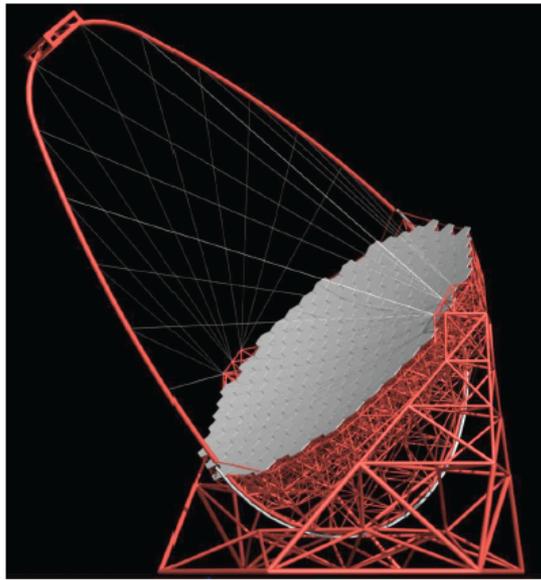
400 m² dish area
27.8 m focal length
1.5 m mirror facets

4.5° field of view
0.1° pixels
Camera Ø over 2 m

Carbon-fibre structure

Active damping
of oscillations,
active mirror control

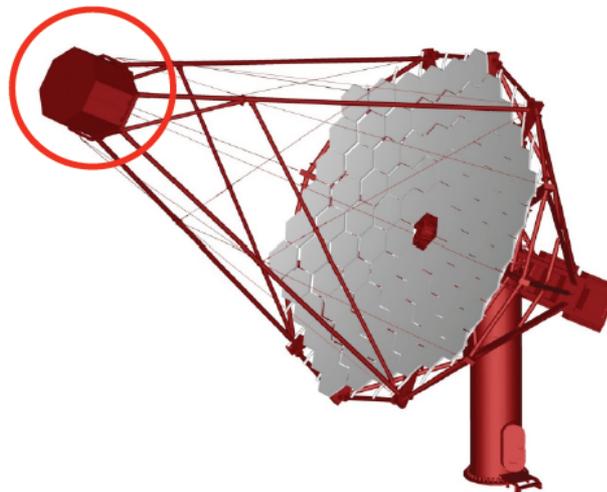
4 LSTs on each site



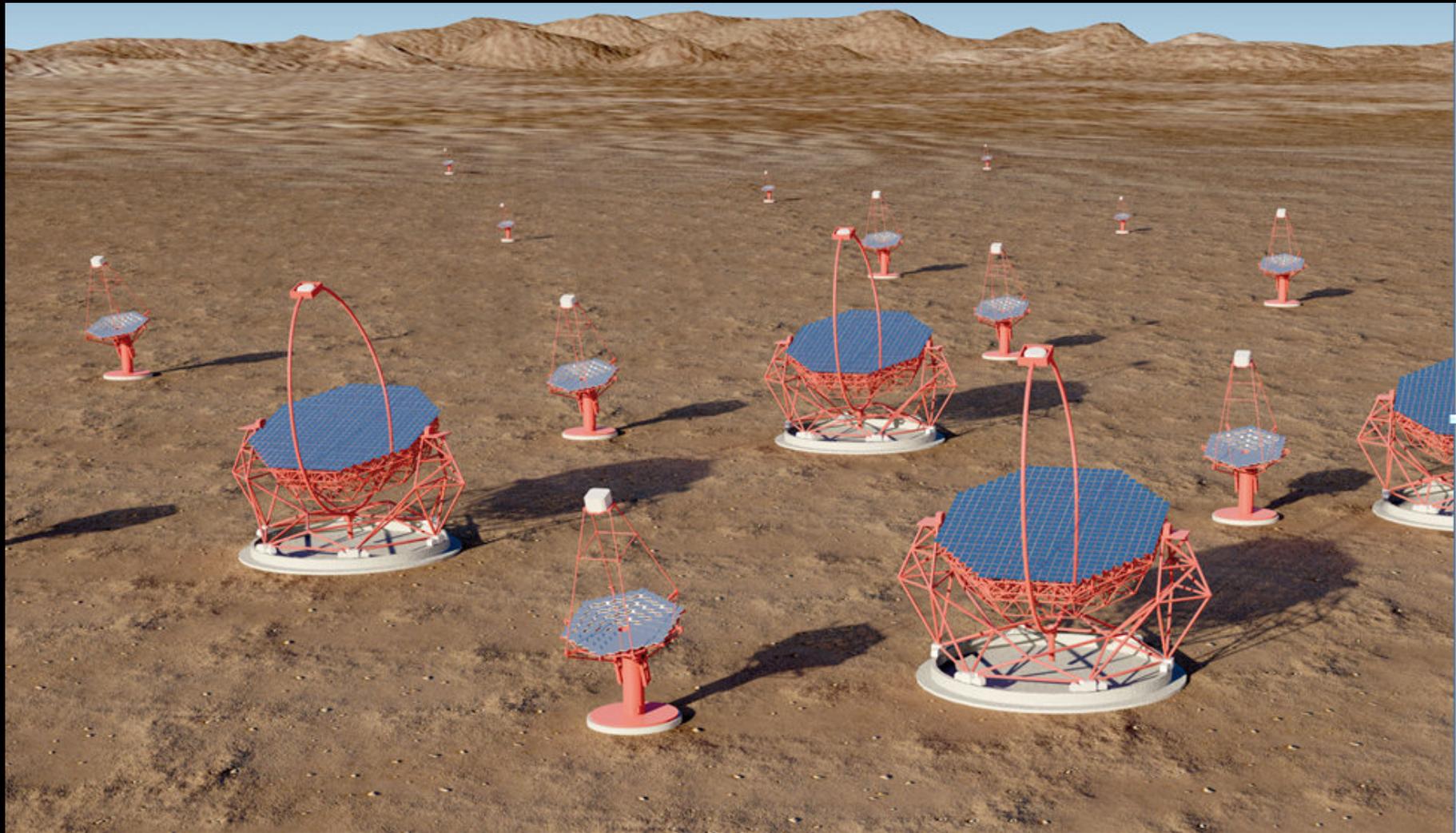
100 m² dish area
16 m focal length
1.2 m mirror facets

7-8° field of view
~2000 x 0.18° pixels

25 MSTs on South site
15 MSTs on North site



CTA in Arizona

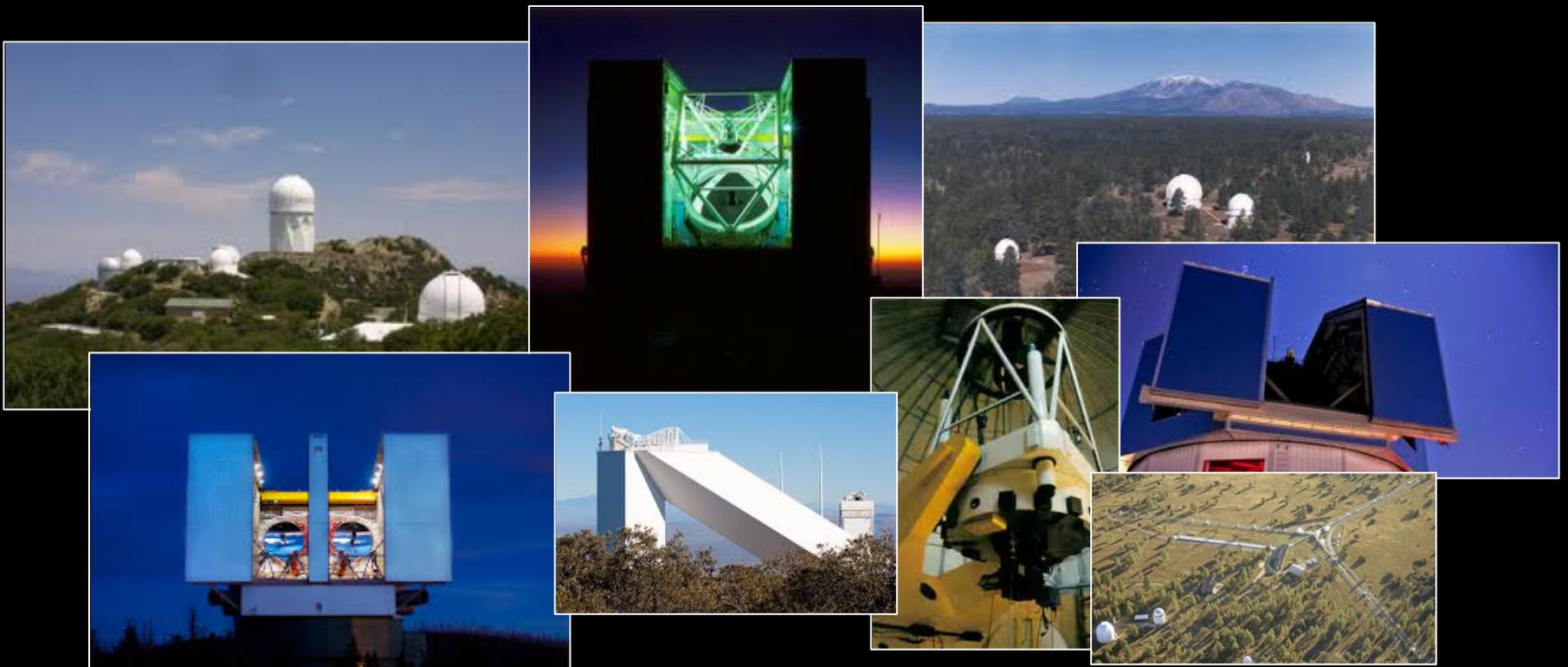


Astronomy in Arizona

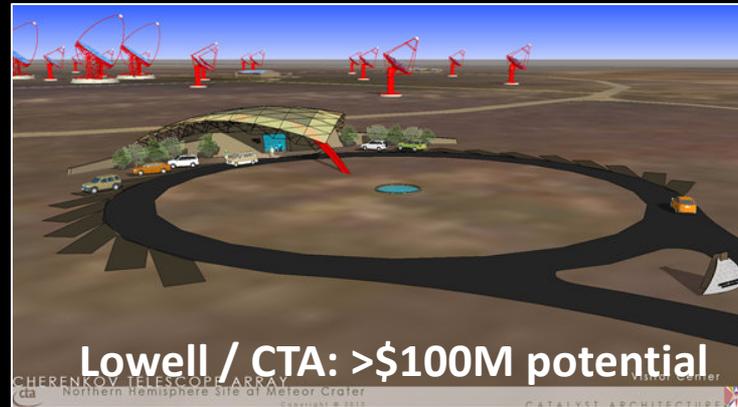
Astronomy, Planetary, and Space Sciences in Arizona

(2006) Capital investment: \$1,200,000,000 Annual Impact: \$252,000,000 Jobs: 3,300

(2013) New/pending investment potential: >\$200M in N AZ alone



Astronomy in Flagstaff



Astronomy at Lowell Observatory

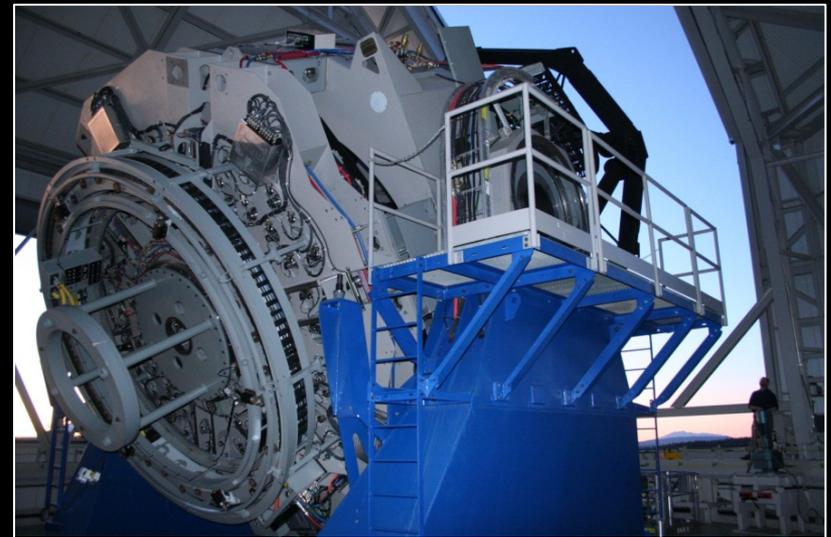


Private, non-profit astronomical research institution founded in 1894

Current staff of 85

*20 Ph.D.-level astronomers
(research strengths include outer solar system, exoplanets, star formation, stellar variations)*

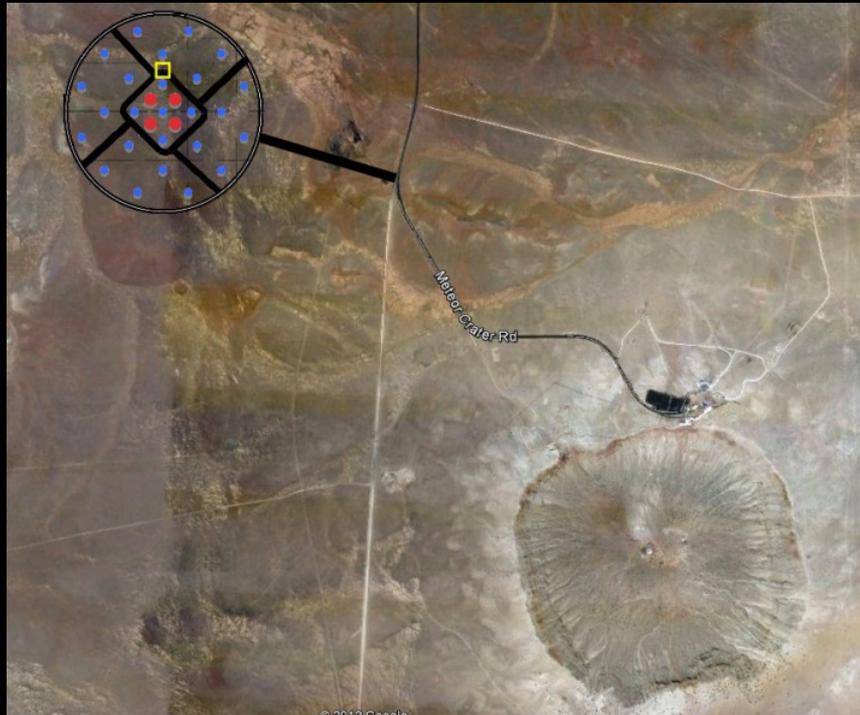
*Annual operating budget \$6.6M,
growth to \$9.0M projected by 2015.*



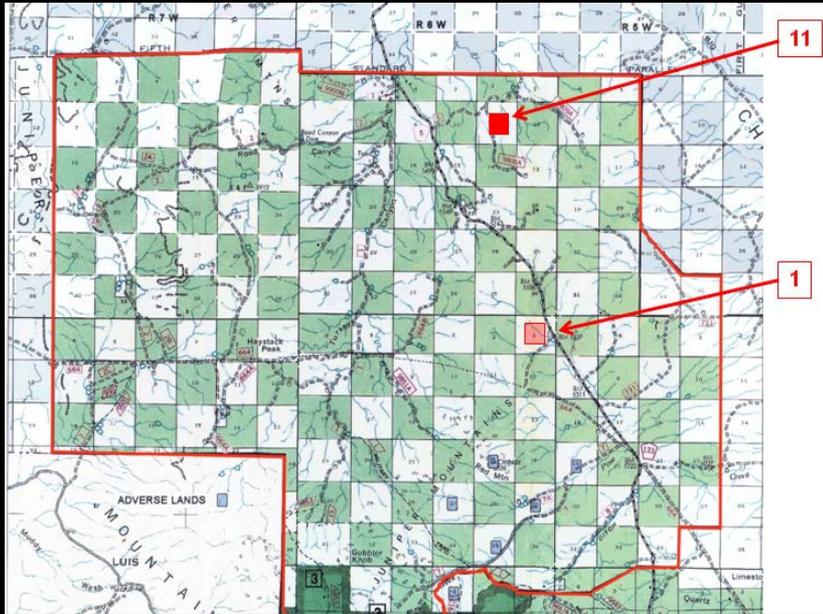
Proposed Sites in Arizona



Meteor Crater



Yavapai Ranch



Site Selection Timeline

JUNE-AUGUST 2012

Placement of site monitoring equipment at both sites

OCTOBER 2012, JANUARY 2013, APRIL 2013

Site review meetings

April 2013 in Heidelberg, Germany was first presentation to Site Selection Committee

SUMMER 2013

Site Evaluation Summary document developed by CTA with input from proposers

AUGUST 4-5, 2013

Werner Hofmann (Heidelberg office) visits Meteor, Yavapai, Lowell, NPOI, DCT

SEPTEMBER 1-20, 2013

Internal CTA committee develops initial rankings of N hemisphere sites

**Meteor and Yavapai remain in contention*

SEPTEMBER 23-25, 2013

Consortium meeting in Warsaw to discuss initial rankings for both hemispheres

END 2013

Site Selection Committee issues final recommended rankings for both hemispheres

Priority Site: Meteor Crater



Priority Site: Meteor Crater

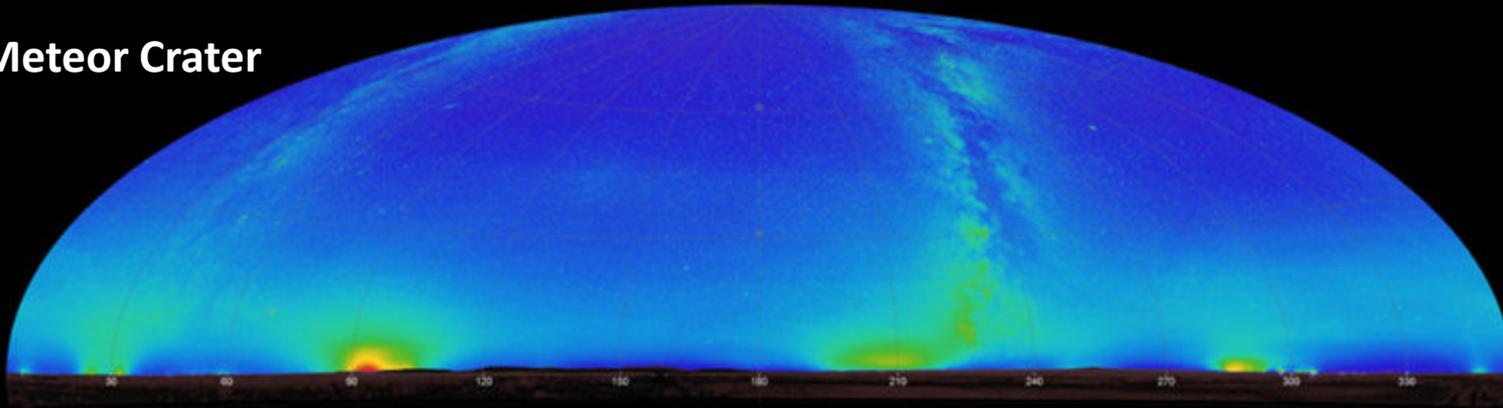


Visual Magnitudes per square arc-second

CTA Meteor Crater Site September 18, 2012 21.87 hours LMT

Full Resolution Mosaic

Meteor Crater

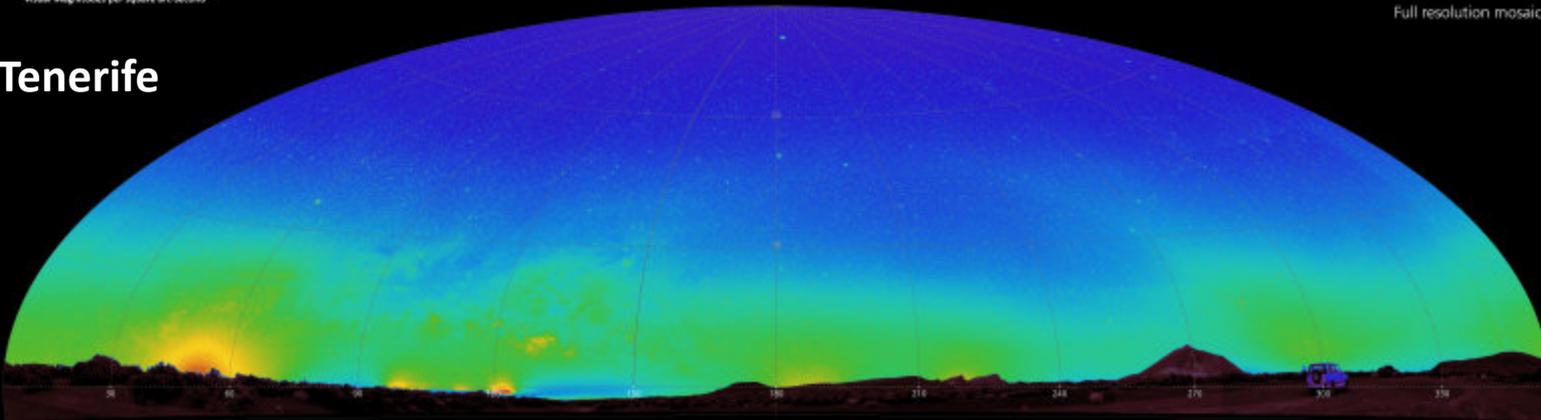


Visual Magnitudes per square arc-second

CTA Canary Islands Site - 16.5441 W 28.27395 N June 5, 2013 21.3 hours LMT

Full resolution mosaic

Tenerife



U.S. National Park Service
Night Skies Program

Data collected by: L. Wiseman
Data processed by: D. Dursoe

Hammer-Aitoff Equal Area Projection - South Centred

Priority Site: Meteor Crater



CHERENKOV TELESCOPE ARRAY
Northern Hemisphere Site at Meteor Crater



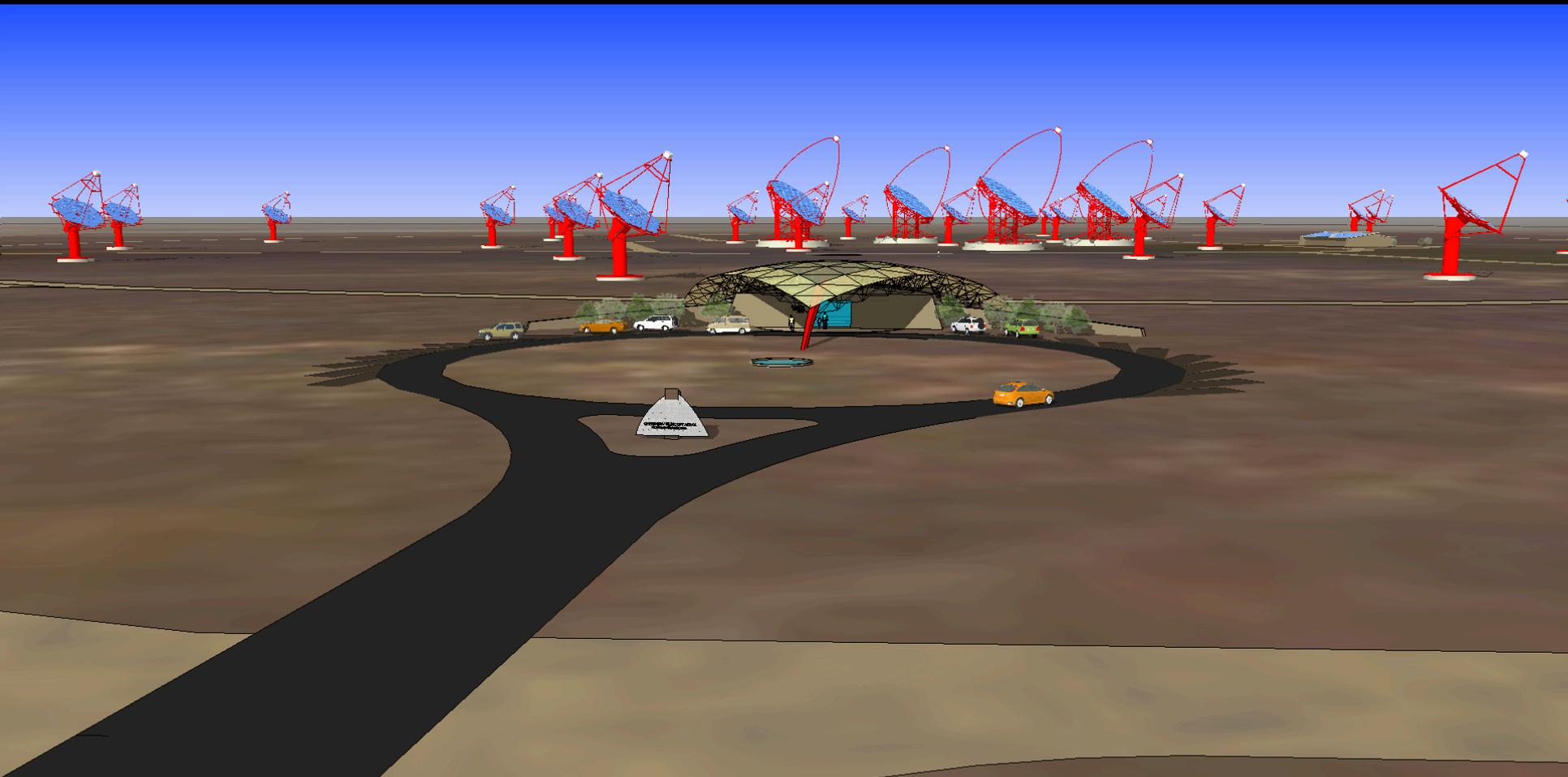
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BirdsEye from East

CATALYST ARCHITECTURE



Priority Site: Meteor Crater

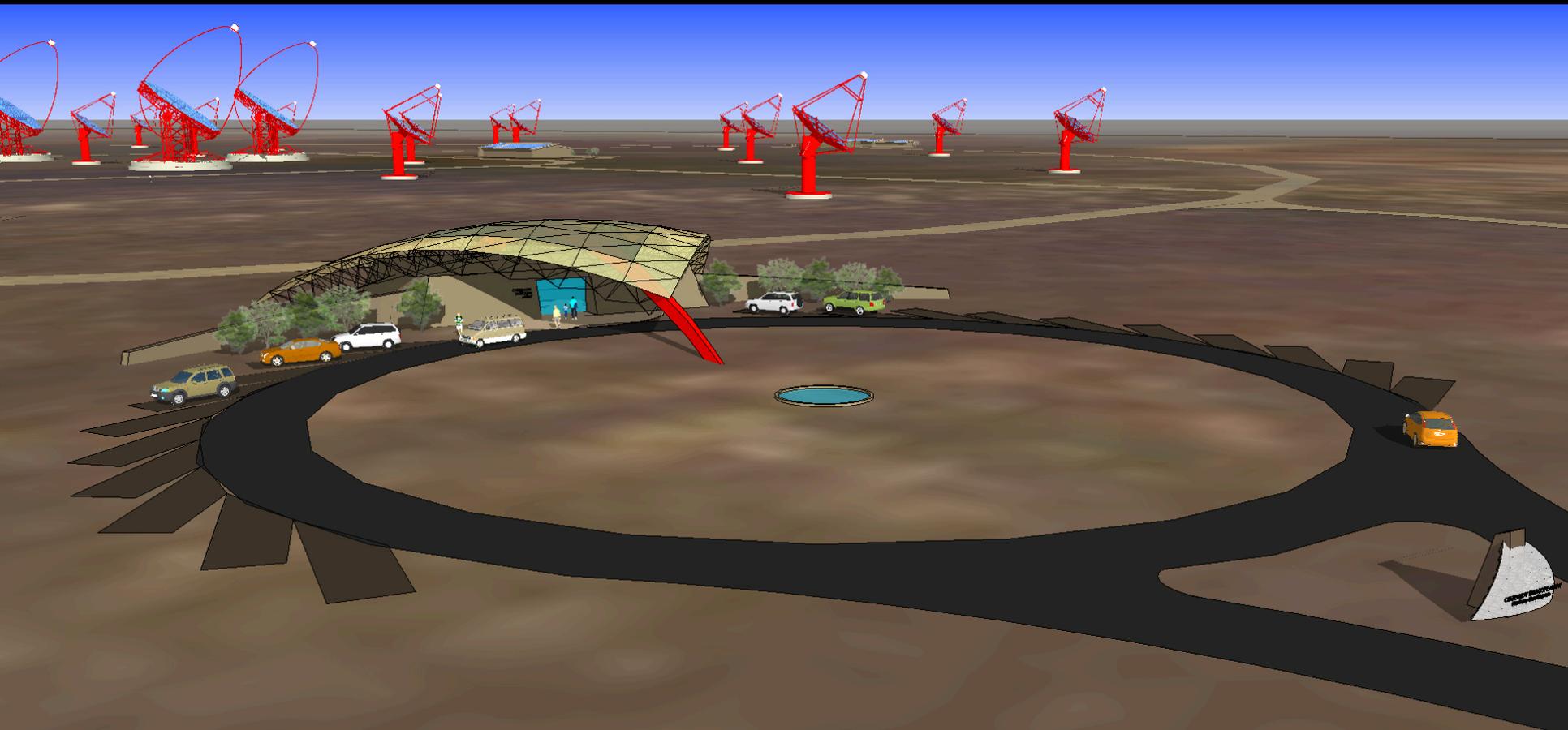


CHERENKOV TELESCOPE ARRAY
Northern Hemisphere Site at Meteor Crater

Visitor Center



Priority Site: Meteor Crater



CHERENKOV TELESCOPE ARRAY
Northern Hemisphere Site at Meteor Crater

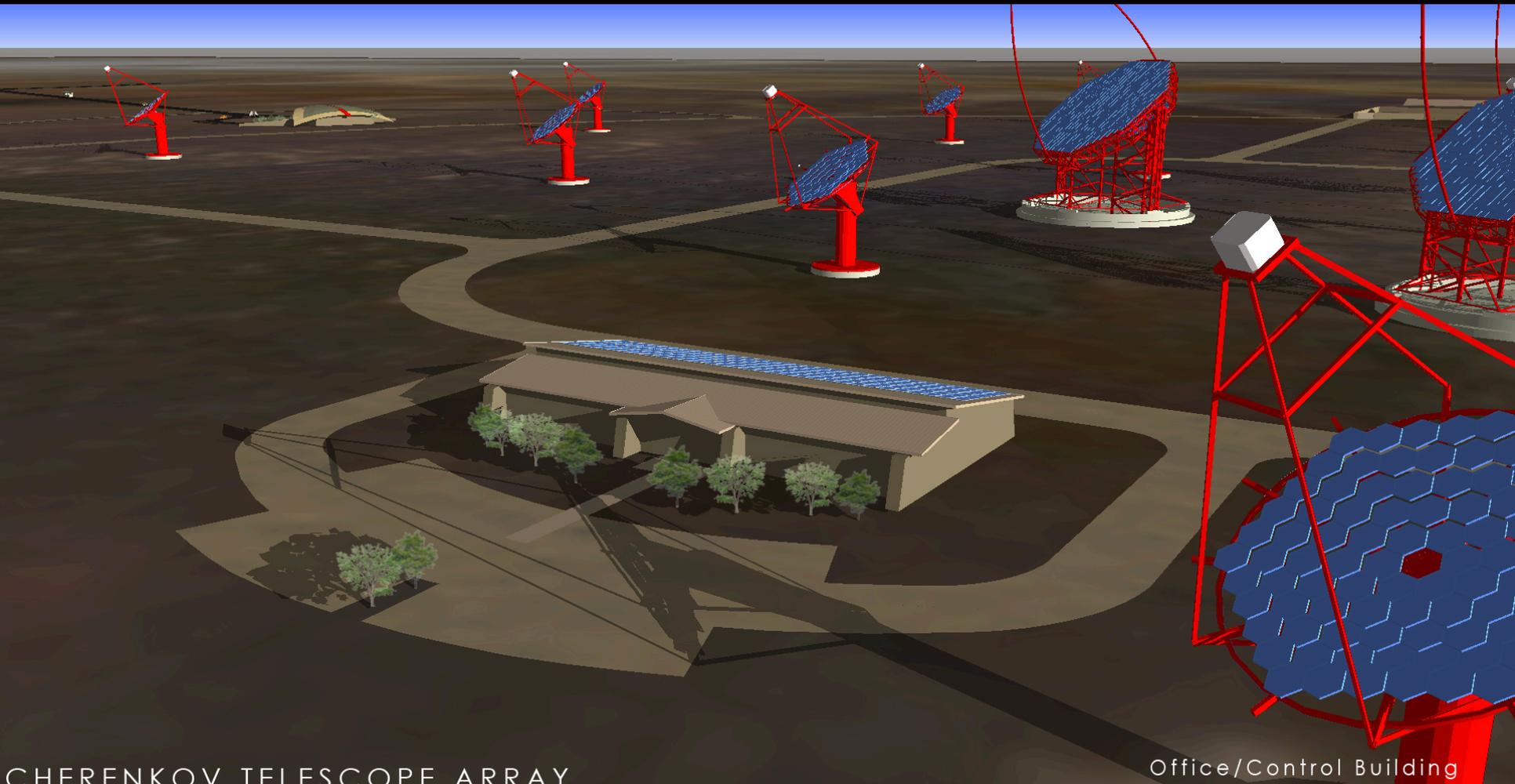
Visitor Center

cta Copyright © 2012

CATALYST ARCHITECTURE



Priority Site: Meteor Crater



CHERENKOV TELESCOPE ARRAY
Northern Hemisphere Site at Meteor Crater

Office/Control Building



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CATALYST ARCHITECTURE



The future in very high energy gamma ray astronomy



- Perfect mix of guaranteed science and discovery potential
- Safe extrapolation of proven technologies, well-predictable performance
- Supported by a large and diverse community
- Highly ranked by major science roadmaps
- Currently in FP7-supported Preparatory Phase
- Aim for deployment over 5 years – 2014-2018