GeV-TeV Emission from GRBs

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• Summary
• Observational Status
• Nature of Ground-based Observatories
• Current Ground-based Telescopes
• New Observatories: Next Generation Telescopes
• Predictions: Prompt and Afterglow
• Outlook
HESS

Logistics

- Countries: Germany, France, Namibia, South Africa, U.K.
- Project Office: MPI, Heidelberg, Germany
- Location: Goellschau, Namibia, Africa; 1.8 km

Properties

- Telescope(s): Four Telescopes; Aperture 12m; Focal length 15m; corners of square 100m by 100m
- Structure: Space frame; steel; Davies-Cotton
- Mirrors: 60 cm circular; glass; quartz- overcoating
- Slew Speed: 2 deg./sec
- Camera: PMTs; 960 pixels; FOV 5 deg.;
- New Technologies: Front-end trigger

Status

- Funding Approval: Done
- March, 2002: All telescopes on site
- June, 2002: First camera on site
- 2003: First Light: array
How many telescopes have a stamp issued in their honor?
HESS Camera
CANGAROO III

Logistics

- Countries Japan, Australia
- Project Office ICRR, Tokyo, Japan
- Location Woomera, Australia; S.L.

Properties

- Telescope(s) Four Telescopes; Aperture 10m; Focal length 8m; corners of square 100m by 100m
- Structure Space frame; steel; parabolic
- Mirrors 80 cm circular; composite plastic
- Slew Speed ??
- Camera PMTs; 512 pixels;
- New Technologies Composite mirrors

Status

- Funding Approval Done
- 2001 One telescope in operation
- 2002 First light: second telescope
- 2003 First light: third telescope
- 2004 First light: full array
CANGAROO- Telescope One

Telescope Two now under construction
VERITAS

Logistics
- Countries: U.S.A., U.K., Ireland
- Project Office: Whipple Observatory, Arizona, U.S.A.
- Location: Montosa Canyon, Arizona; 1.3 km

Properties
- Telescope(s): Seven Telescopes; Aperture 12m equivalent; Focal length 12m
- Structure: Tubular steel; 30 tonnes; Davies-Cotton; Covers
- Mirrors: 315; 60 cm hexagon; glass; anodized Al
- Slew Speed: >1 deg./sec
- Camera: PMTs; 499 pixels; one size; 0.15 deg.; FOV: 3.5 deg.
- Features: Flash ADCs; Covers; Sub-arrays

Status
- Funding Approval: Pending
- 2001: R&D
- 2002: Construction of Prototype
- 2003: First light: one telescope
- 2005: First light: four telescopes
- 2007: First light: seven telescopes
Array of seven telescopes at the Whipple Observatory