« All-Sky » cameras for sky watching

Enlarge your vision to whole universe!

April, 2013
Our products

- OMEA: high resolution and long exposures oriented
  - 1.3 to 2 millions pixels
  - 100% digital
  - Up to 15 frames/sec

- TYTEA: video and fireball detection
  - 0.3 to 0.8 millions pixels
  - 100% digital
  - Up to 60 frames/sec
The OMEA all sky camera
ALCOR SYSTEM’s All-sky cameras

- High quality image
- Water tight connector (IP68)
- No insect trespassing
- Dome heater
- Temperature/humidity sensors
DUAL WORKING MODE

Long exposure mode (45s)
- Clouds distribution
- Sky quality (Light pollution, Moon)
- High atmosphere (OH glow Northern ligths)
- Slow events: zodiacal light

Video mode
- 10 to 60 frames per second
- Fireball, satellites re-entry
- Fast events
- Real time video surveillance
Software: long exposure mode

RELIABILITY
24h/24 operation
GPS data

Images can be published to the web

Control software...
Software control panels
OMEA camera (dome heating control)

+14.0 °C
61.5 %
6.6 °C

Tcam=19.9 °C (brut=19.8°C, brutExt=14.0°C)

External temperature and humidity probe
Clouds: daylight image
Auto-iris or not?

Even with 100µs exposure time, no auto-iris (camera has too much sensitivity)

-> Auto-iris with daylight sensor: 100% autonomous
Overnight clouds distribution
Sky quality (180° x 160°)
Sky quality (180° x 180°)

2.0 Million pixels
Gornergrat observatory / Switzerland

- OMEA 1.3M
- 10000 ft elevation
- Extreme climate condition
- Northern hemisphere
High quality mountain skies

Images available for public and schools
Summer sky
Spring sky
Upper atmosphere

: OH-GLOW
PARIS observatory (downtown)
Lovejoy C/2011 W3 comet rise at Las Campanas
Seine & Marne, France

Plane contrails …
Riverland Dingo Obs., Australia
Remote telescopes farm
OMEA-1.3M camera
Riverland Dingo Obs., Australia
Zodiacal light

Riverland Dingo Obs., Australia
Pic du Midi obs  (School & public images)
Color camera version
Fireballs...
Fireballs...

Chile

France
Satellites

Iridium

Sky is crowded of satellites
Chinese rocket / satellite separation

ISS transit

Space Obs – A. Maury

Time lapse video
Daylight rainbow captured
Northern hemisphere summer solstice

Latitude = 43N France

A the same time and date but at different latitudes, on June 16th...
Dawn difference

Same exposure as above
Latitude = 49N France
Northern light capture

Can potential getSprites, Elves...
The TYTEA all Sky Camera
TYTEA camera: lower costs
- Optimized for falling object detection (video mode)
- Able also to work with long exposures
- 100% digital

Long exposure Image
It works well also!
Can run with UFOcapture
TYTEA camera video sample

- Capture automatically video when something changes/moves (UFOcapture)
- High resolution image, high frame rate (4x more pixels than analog cameras)
- PROGRESSIVE video mode, no interlacing!
European network of OMEA cameras
Our cameras throughout the world

A real world wide network....
Customers who trusted us ....

List of link of users/institutes using our camera, this is real time images

- Riverland Dingo Observatory (Australia)
- Observatoire de la Cersyrie (France)
- Observatoire Albignieux (France)
- Gornergrat Observatory (Switzerland)
- Observatoire des Pises (France)
- Observatoire du Pic du Midi (France)
- Space obs (Chili) (Chile)
- Observatoire de la Butte aux lievres (France)

List of camera users (sorry, because of low internet bandwidth in these places, direct link to real time images cannot be disclosed)

- Las Campanas Observatory (Chile)
- INAF (Italy)
- HAT south (Australia)
- Moscow University
- Observatoire des Makes (Reunion island / CNRS)
- Astronomy & Astrophysics Division (India)
- Curtin university (Australia)
- Siding Springs (Australia)
- ITelescope.net (Australia)
- New mexico Skies (USA)
- Institute of Astronomy and Astrophysics (Taiwan)
- Observatoire de haute Provence (OHP)
USA reference customers

- National Institute of Standards and Technology (NIST)

- Lowell Observatory

- New Mexico skies
A real time worldwide ALL-SKY camera network is visible with only few clicks
The EUDA All Sky Camera
EUDA camera

- 8 millions pixels
- Long exposure
- Professional range product
EUDA camera: extreme resolution

100% crop extracted from previous image

Comets can be discovered...
EUDA all-sky camera
EUDA camera

- 8 millions pixel product
- 16 bits data output
- Automatic dome heater (based on external sensors and current weather)
- Dedicated software
- FITS and auto time lapse builder
- 20 m USB 2.0 reliable link
- Customized filter (IR cut or Johnson filters)
- Thermalized and cooled sensor
- Currently in production
- Pre-orders can be placed
- The end -