The 7th International Workshop on Very High Energy Particle Astronomy (VHEPA2014)

- Next Generation Explorer for Cosmic Ray Origin -

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Nagoya University

VHEPA2014

Welcome

on behalf of Organizing Committee

.... At this international workshop, we intended to survey the current status of VHE particle observations, examine useful avenues for astronomical observations in the near future, and discussed Next Generation Explorer(s) for Cosmic Ray Origins as subtitled, and to share a common interest in the field ....

VHEPA Workshops

.... VHEPA is a series of workshops since 2000, aiming for comprehensive study with multi-particle observations toward Very High Energy Particle Astronomy.....

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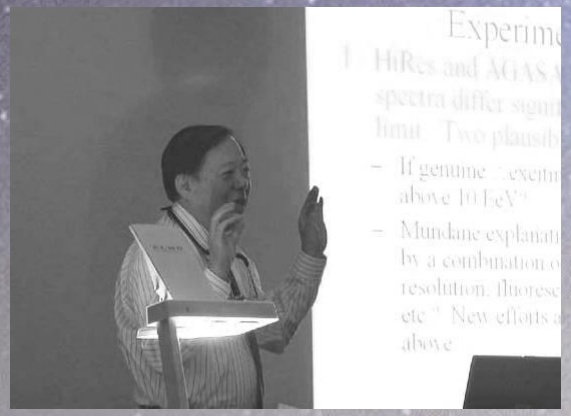
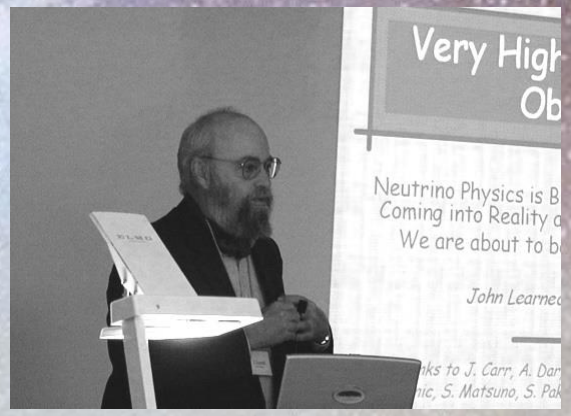
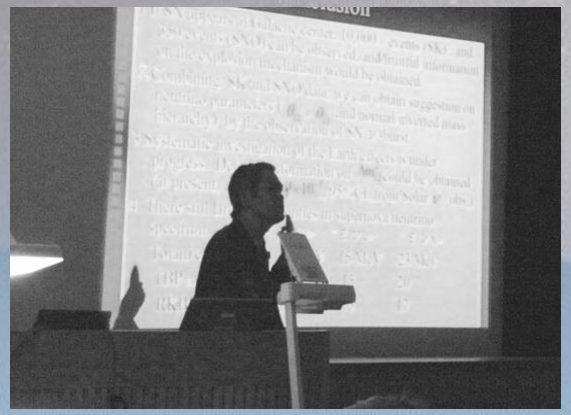
VHEPA-3 (March 20-22, 2003)







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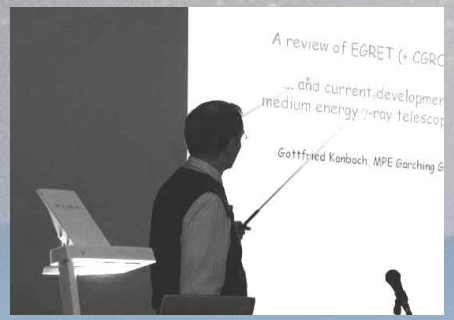
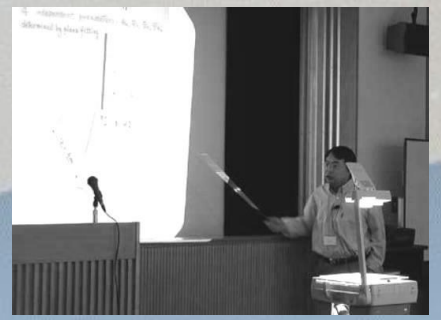
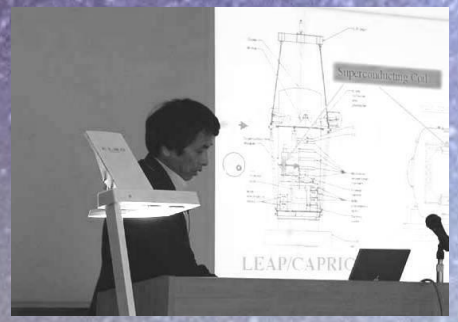
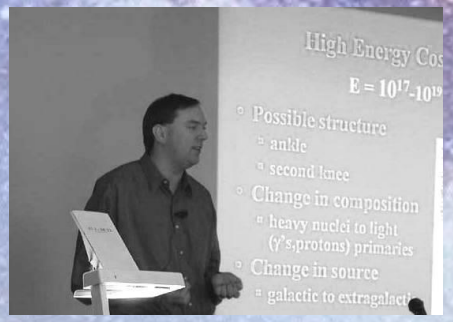

A review of EGRET (+ CGRO
... and current developmen
medium energy γ-ray telesco
Gottfried Kanbach, MPE Garching



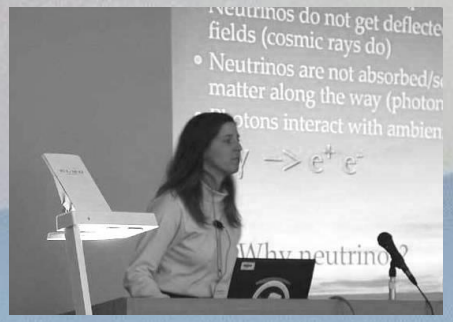

LEAP/CAPRI


High Energy Cos
E = 10^17-10^
Possible structure
ankle
second knee
Change in composition
heavy nuclei to light
(γ's,protons) primaries
Change in source
galactic to extragalacti


CANGAROO
An array of imaging atmospheric
Cherenkov telescopes to detect
high-energy gamma-rays fr
celestial objects in Woome


VERITAS


Window of Opportunity


fields (cosmic rays do)
Neutrinos are not absorbed/s
matter along the way (photon
tons interact with ambien
→ e⁺ e⁻

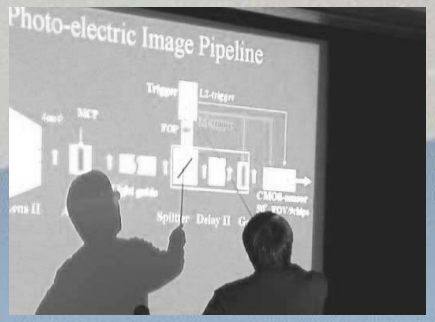


Photo-electric Image Pipeline
Trigger
L2-trigger
MCT
FOP
Splitter
Delay II

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New Concepts from VHEPA-3

Future Searches for High Energy Galactic Cosmic Ray Sources

T. Adams
Florida State University
E. Loh
University of Utah
S. Westerhoff
Columbia University

The NuTel Project

Watching for Tau Neutrinos from a Mountain

George W.S. Hou (侯維恕)
National Taiwan University

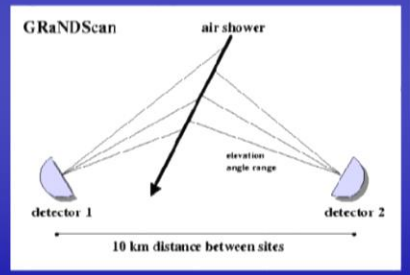
March 22, 2003 @ VHEPA-3, ICRR, Tokyo

VHE Particle Astronomy with All-sky Survey High Resolution Air-shower detector (Ashra)

Ashra Collaboration
Makoto Sasaki

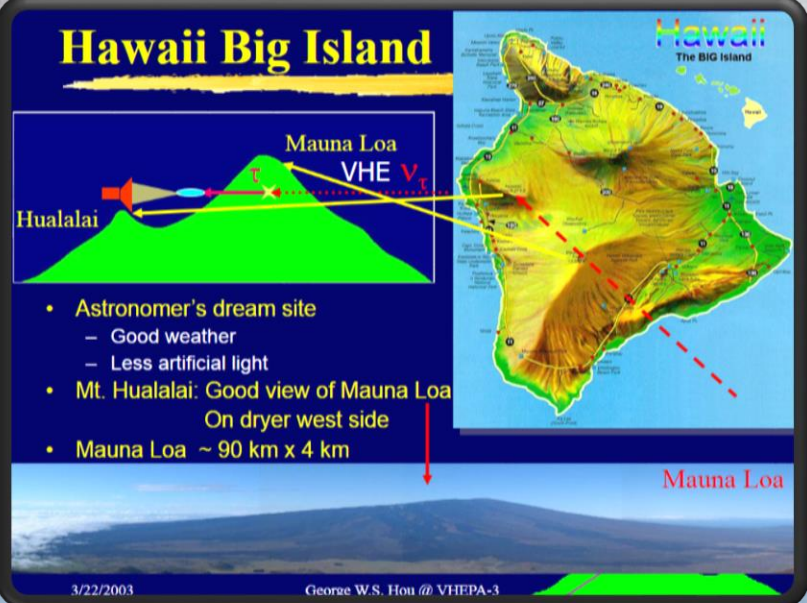
Proposed Telescopes

- Telescopes
  - three 30°x30° cameras/mirrors
    - 30°x30° is largest size which doesn't need corrector plate
  - covers 30° in zenith and 90° in azimuth
  - 1° resolution
  - light-weight, easy to relocate
- Two telescopes
  - placed 10km apart
  - viewing same region of atmosphere



Future Searches for High Energy Galactic Cosmic Ray Sources
T. Adams ICRR March, 2003

Hawaii Big Island



- Astronomer's dream site
  - Good weather
  - Less artificial light
- Mt. Hualalai: Good view of Mauna Loa On dryer west side
- Mauna Loa ~ 90 km x 4 km

3/22/2003 George W.S. Hou @ VHEPA-3

New Eye for Particle Universe

Key Technology:

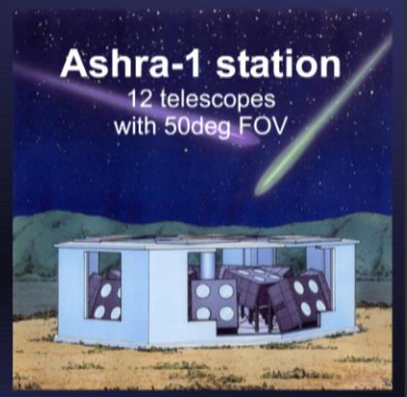
9M-pixel CMOS sensor covering 50deg FOV

Leading Features:

All-sky Survey
=> Discovery Potential

1arcmin directional accuracy
=> Source ID

Simultaneous Detection for Cerenkov & Fluorescence
=> Physics ID



Pioneer Experiment for VHE Particle Astronomy: Ashra-1

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See and Hope

I see that the workshop is a perfect venue to

- discuss all issues (scientific and technical) openly and frankly so that great ideas could be made greater with imperfections removed

I hope that this workshop will be able to

- Formulate plans to realize the identified opportunities
- If necessary, collaborations could be formed to realize these opportunities.

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