

# **"The Last Word"**

## **ATLAS Users Perspective**

**ATLAS 25<sup>th</sup> Anniversary Celebration**  
**23 October, 2010**

**W. Loveland**  
**Oregon State University**  
**Chair of ATLAS User's Executive Committee**

**Thank You!!**

# ATLAS Users Executive Committee

- Paul Garrett, University of Guelph
- Walter Loveland (Chair), Oregon State University
- Lee Riedinger, University of Tennessee, Knoxville
- Kris Starosta, Michigan State University/Simon Fraser University (Previous Chair)

# Role of ATLAS UEC

- The Executive Committee shall act in an advisory capacity to the ANL Physics Division Director, regarding policy on operation, development, and long-range planning of the ATLAS facility. It is expected that the Executive Committee shall meet with the Physics Division Director at ANL on a regular basis.

Strategic planning  
Emphasis on various areas of nuclear physics  
New developments ( CARIBU, Helios, Energy upgrade)  
Operations Issues

- The Chairperson of the Executive Committee is an ex-officio voting member of the ATLAS Program Advisory Committee.

# ATLAS UEC/Management Interactions

- Phone meetings every 1-2 months, more frequently if needed, (3 meetings in 2 months re FRIB issues)
- ATLAS Users meetings
  - Previously yearly at Fall APS DNP meeting, now special separate meetings of all users groups
- User Workshops
- UEC presence and participation in the ATLAS PAC

# Who are the ATLAS users (2008)?

249 outside ATLAS users(84%)

49 ANL users (16%)

**Total: 298 users\***

**Universities: 65%**

U. S. Universities 34%

Foreign Universities 31%

**Laboratories: 35%**

U. S. Laboratories (non-ANL) 5%

U. S. Laboratories (ANL) 16%

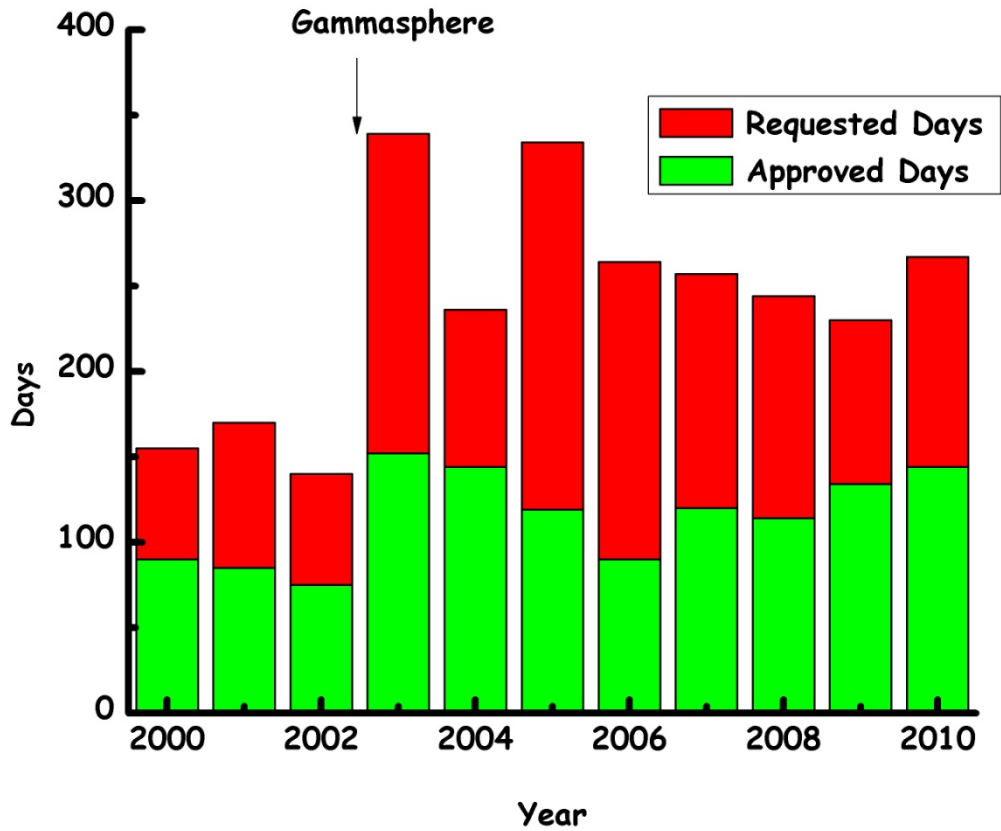
Foreign Laboratories 14%

\*: this is the number of Users participating in experiments, i.e. on proposals that have run. Of these 213 were present at ATLAS.

# University Users at ATLAS (2008)

- Who are the University users?
  - 60 Faculty (31%)
  - 64 Postdocs (33%)
  - 71 Grad Students (36%)
- Output
  - 9 Ph.D. dissertations

# User Demand





# Support of Users on/off site at ATLAS

Supervision of students

Scientific support

Analysis

Interpretation

Software development/implementation

Experiment design

Practical experimental needs

**Target preparation (Unique and outstanding)**

Experiment setup

Equipment loan

Outstanding operations group (wide variety of beams, reliable operation)

Support for users on-site

Lodging

Entry

Safety training

Unfortunately, due to DOE policy & regulations, the longstanding practice of a subsidy of lodging expenses for University users and the use of a UC vehicle has been stopped.

# “Misery coefficient” and related issues

- A measure for RNB facilities is the “misery coefficient”  $\cdot$  ( $\frac{\# \text{ hours spent waiting for beam}}{\# \text{ hours of beam on target}}$ ). As an extremely well-run stable beam facility, ATLAS has a low misery coefficient of 0.082 (2009).
- ATLAS has a relatively low backlog. With average 6 day/week operation, 24 hr/day operation, the current backlog of approved proposals is 2-3 months.

# Research Topics from Users Workshop (2006)

Topic 1: the development of beams of short-lived isotopes and their subsequent use for measurements of astrophysics interest and for nuclear structure and reaction studies.

Topic 2: the production and characterization of nuclear structure away from the valley of stability including nuclei at the very limits of stability, i.e.; nuclei at and beyond the proton drip-line, on the neutron-rich side of the valley of stability, and in the region with  $Z > 100$ .

Topic 3: the study of the nature of nuclear excitations as a function of mass, proton or neutron excess, spin and temperature: characteristics such as nuclear shapes, the interplay between degrees of freedom, and changes in shell structure;

Topic 4: the use of traps for high precision mass measurements for astrophysics and for searches of physics beyond the standard description of the weak interaction.

Institute for Structure & Nuclear Astrophysics  
University of Notre Dame



# Current ATLAS Strategic Plan (2010)

## Scientific Goals

- Understanding the stability and structure of nuclei as many-body systems built of protons and neutrons bound by the strong force
- Exploring the origin of the chemical elements and their role in shaping the reactions that occur in the high-temperature and explosive events of the cosmos
- Understanding the dynamics governing interactions between nuclei at energies in the vicinity of the Coulomb barrier
- Testing with high accuracy the fundamental symmetries of nature by taking advantage of nuclei with specific properties

# Summary

- Running at ATLAS is a very pleasant experience for users.
- Experiments are scheduled promptly after approval.
- Highly reliable accelerator operation
- Excellent user support
- A forward-looking ATLAS management anticipates user needs and is developing several exciting prospects for future research.

**Thank You!!**