

# Quarknet 2015 - Vanderbilt University

## 20-24 July 2014

**Welcome!**

The week in a nutshell:

**Monday Morning**, news and talks

**Monday Afternoon**, talk cosmic rays and crmds, speed-of-light (for Thursday), handle detectors, learn/practice with *Equip*

**Tuesday & Wednesday**, Bob Peterson, shower mode, and e-Lab

**Thursday**, High School Students/VSA, Dr. Erika Grundstrom's class in *Galaxies and Large Scale Structure*

**Friday Morning**, Debrief about work with students, week, fill-out the web survey form

# Tom Jordan, 1963-2015

- Quarknet Program Administrator since 1998
- One obituary at <http://www.legacy.com/obituaries/gazettenet/obituary.aspx?pid=174544107>
- aa

## Thomas A. "Tom" Jordan (1963 - 2015)

### Obituary



FLORENCE - Thomas A. Jordan, 52, of Bridge Road, died suddenly Monday, March 30, 2015, at Cooley Dickinson Hospital.

He was born Jan. 24, 1963, in Burlington, Vermont, to David and Beverly Barker Jordan. He lived his childhood years in the Burlington area before relocating with his family to central Florida. He attended Grace Lutheran School and graduated from Winter Haven High School in 1981.

Tom studied physics and astronomy, earning his bachelor's degree from the University of South Florida and his master's degree from the University of Arizona. He taught physics at the high school level in Florida. From 1994 to 1998, he was a valuable member of the physics faculty at the Illinois Mathematics and Science Academy in Aurora, Illinois.

At the time of his passing, Tom was project coordinator for QuarkNet, a ground-breaking program for physics educators' professional development. He was with QuarkNet from its beginning in 1998. Tom's contributions to the lives of physics teachers and students of physics around the world are legion. He was a member of the American Association of Physics Teachers and several other professional organizations. More locally, he was very involved with the Northampton Public Schools Action Coalition. He believed deeply in the value of a strong education in both the sciences and the liberal arts to create a foundation for life long learning.

### Guest Book

*"Tom was a friend, a mentor and an inspiration to me. I will..."*

- *Jeremy*

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# Administration

- Introductions around the room.
- Make sure you check the day on the **attendance sheet**. It is how the stipend will be calculated. Check it and sign it your last day in attendance.
- We have **three** working sets of cosmic ray muon detectors (CRMDs) and have old, but nice laptops for datataking and control. We have a **third** standard set in a box, and a **fourth** set with non-standard (small) scintillator paddles. We retired the desktops.
- The model of installing the software on local computers was extra effort for me, and difficult with security measures at schools. You **can** install the control program Equip and its USB drivers on all platforms with USB ports and modern

# Monday Schedule

## news and talk

8:00-8:30am arrive, collect parking permits for the week, **check the attendance sheet**

8:30-8:45am the weeks schedule, Bill Gabella

8:45-9:20am CERN's Large Hadron Collider restart, future of accelerators, Bill Gabella

9:20-9:50am CMS and its “restart”, Bill Gabella

9:50-10:00am break

10:00-11:00am LHC Physics, Andres Delannoy

11:00-noon Astronomy and Astrophysics News, x-ray objects, Rudy Montez

noon-1pm Lunch

## cosmic rays and crmds

1:00-2pm Cosmic rays, crmds, showers, randoms, and speed-of-muons, Bill Gabella

2-3:30pm Setup CRMDs on 9<sup>th</sup> floor, first as stacked, then as shower; practice with the Equip program.

# Tuesday and Wednesday Schedule

## **Quarknet Cosmic Ray e-Lab with Bob Peterson (Fermilab)**

8:30-9:00am arrive

9:00-noon Work

noon-1:00pm Lunch

1:00pm-3:30pm Work

...and ditto for Wednesday...

# Thursday Schedule

**Dr. Grundstrom's class visiting, speed-of-muon experiment. Rooms SC6322, SC 6333, SC6913D (VCHIP Conference Room), 9<sup>th</sup> Floor laboratory.**

8:30am Students arrive, divide into teams of 4 students, 2 Quarknetters, and a crmd

9:00-noon Setup up first data collection, order 1-2-3-4 (top to bottom), approximately one hour, while collecting discuss cosmic rays, the muon detector, and especially the systematics of the time delay to the DAQ card. Setup the swapped order before lunch, 3-2-1-4. Use the 1-3 time difference.

noon-1:00pm Lunch

1:00-3:30pm Run hitsmp on the data file for the columns of rise times and fall times. Work in the spreadsheet(s), Google Drive/Docs.

# Friday Schedule

**Flexible day**

8:30-9:00am arrive

9:00-noon Clean up any Thursday messes. Continue work on the analysis of the data. Debrief about the VSA students and program. Fill out the online survey for Quarknet. "Plan," or suggest a gathering about 6 months from now (Jan-Feb 2016?). Suggestions for next summer? Collect together with other Quarknet teachers?

noon-1pm Lunch

1:00-3:00pm Closeout