



DOE Dark Energy R&D Proposal

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SURVEY

In Jan. DOE requested proposals for Dark Energy R&D projects.

- In Feb. DECam submitted a request totaling \$2.3M to support primarily the equipment funds for the DECam R&D, plus some funds for work at universities. Fermilab agreed to support the R&D labor costs.
- June 7th we learned that our proposal was awarded \$0.9M out of \$1.2M awarded for Stage 3 experiments (\$3.0M total)
 - \$0.45M was awarded for Stage 2, \$1.0M for Stage 4, \$0.3M for theory
- Web page is http://www.science.doe.gov/hep/Kathy/dark_energy_2007_awards.shtml
- Although we only received 40% of our request, this is very good news for DECam.
- Worked with Fermilab and the universities to fit within the reduced amount and submitted revised distribution Monday.
- We need an additional ~ \$0.6M to complete the DECam R&D in FY08 and the universities need funding for Postdocs
- There will be another solicitation in FY08.



News

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- Darren DePoy (OSU) has agreed to be the DECam project Scientist
 - Will spend ~ 50% of his time at Fermilab starting in July
 - Experience Astronomer
 - Many years observing at CTIO
 - Head of the Instrumentation group at OSU since 2001
 - Builder of astronomical instruments
 - Will help translate scientific and technical requirements into detailed specifications that we can use for vendors
 - Help with the decisions we need to make before CD-2 (and after!)
- Trip to Corning to see Glass Blank Manufacturing
 - Very positive trip – they are ready to start
- We expect to place the order July 9th (~\$1M University funds)
 - Draft of response to the Optics CDR has been circulated and is being updated to include what we learned on the trip.



Image Quality Workshop May 22nd

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- <http://des-docdb.fnal.gov:8080/cgi-bin/DisplayMeeting?conferenceid=42>
- Agenda covered a review of the Science Requirements, what has been measured on the telescope and what has been modeled
- We reviewed the BCAM capabilities and we decided Dave should work with Tim to get a few installed in the near future
- Finally we reviewed the hexapod specs and how they related to the science requirements. **Will go out for a “request for information” to get rough cost estimate tomorrow** for
 - An engineering demonstration
 - The full system
 - Hope to place the order for the engineering study by Oct. 2007



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Power Supplies

An internal review of the power supply progress was held June 13th.

UIUC has been working on a solution using Vicor switching power supplies, but so far these are contributing significant noise when compared to the set of linear supplies used in our current teststands ($>3e-$ rms contribution)

Decisions made

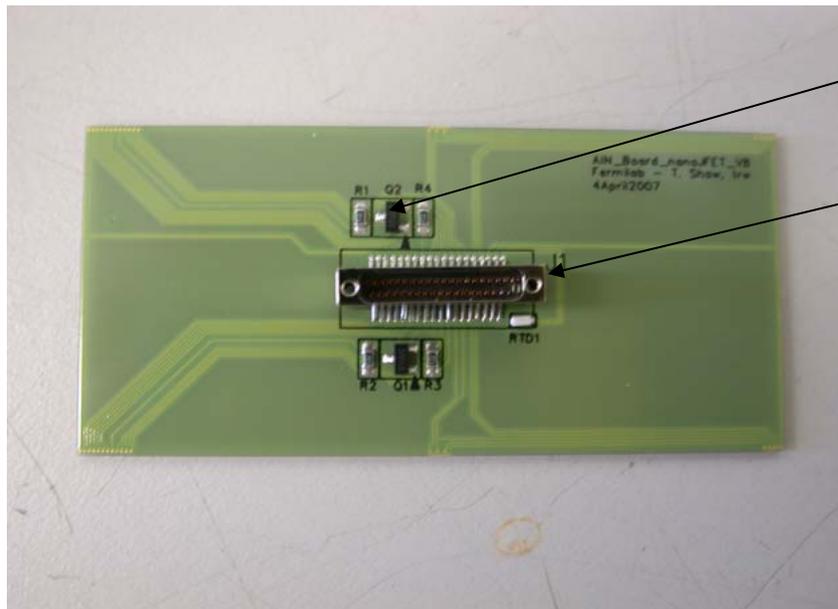
- FNAL engineers will take a look at the Vicors and see if anything can be done. (Steve Chappa & Dave Huffman)
- UIUC engineers will look into selecting a set of linear supplies and working out the mechanical mounting issues.
- FNAL will look at the feasibility of a third approach using 48V DC input with DC/DC converters.
- Our aim is to have a solution by Fall '07.



New AIN Boards

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- Two new types of AIN boards have been received and are being assembled.
- New vendor delivered on time!



JFET

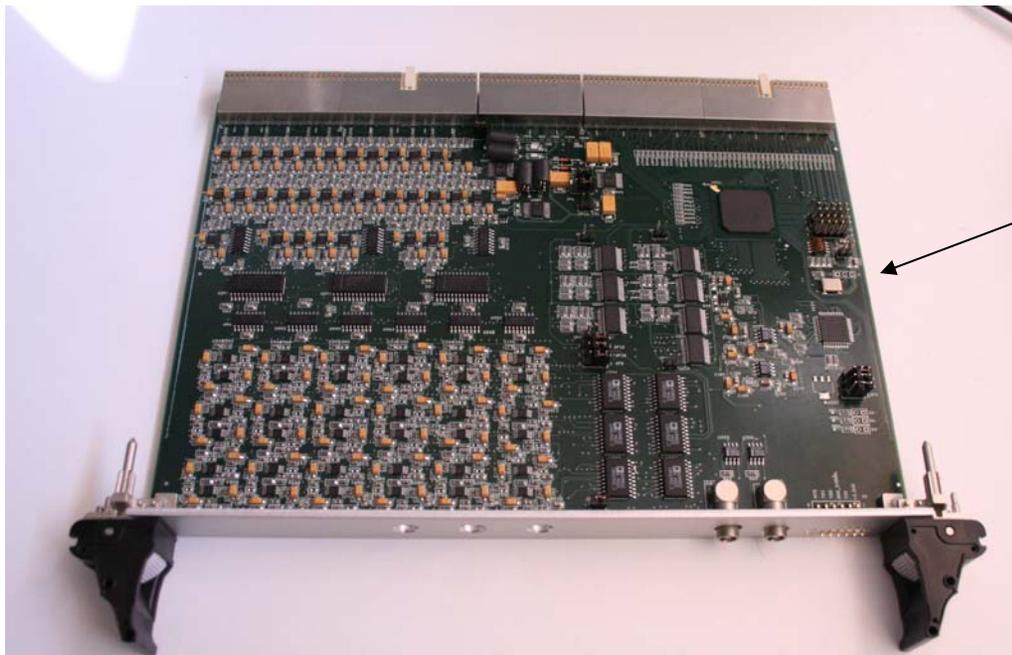
Nanonics Connector



Clock Board

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- Engineers from IFAE (Barcelona) and CIEMAT (Madrid) will come to FNAL June 26-July3 to test the new Clock Board.
- We will also work on replacing the Master Control Board Systran communication link with S-Link.



Clock Board



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FE Workshop

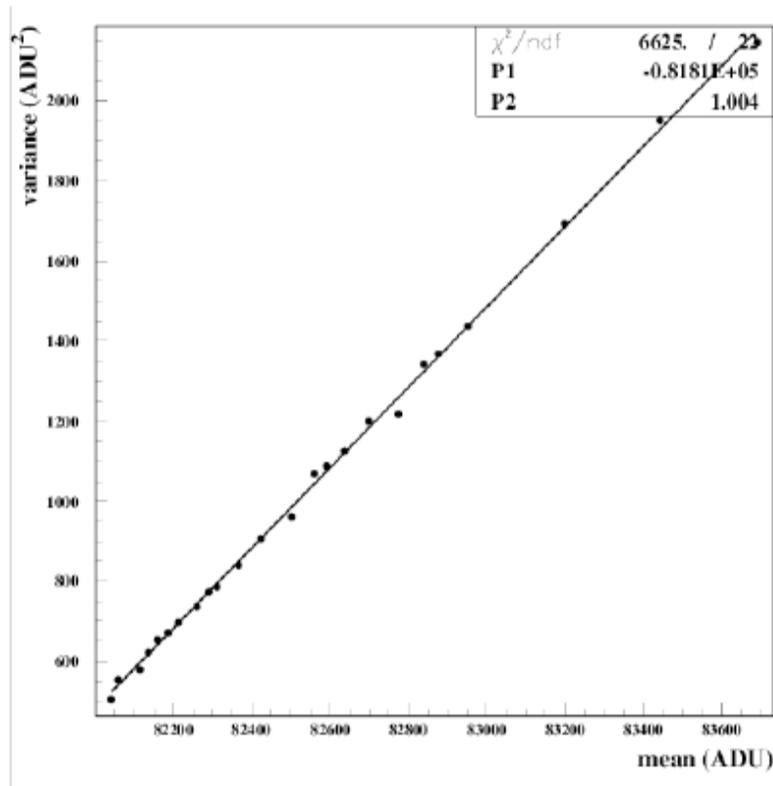
- We have scheduled a DES FE Electronics workshop for September 17-19.
 - We will review
 - all Monsoon board designs
 - power supplies
 - cabling
 - AIN board design
 - Vacuum Interface Board
 - crate mechanical design
 - crate slow controls design



CCD readout noise reduced

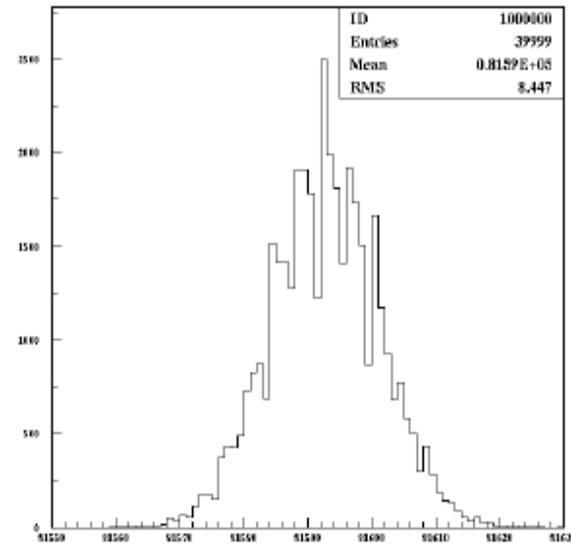
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New Sequencer code from Ricardo Schmidt (CTIO) has allowed us to speed up our readout!



In our cube:

> 8.5e at 4.0 usec/pix





Other progress/news

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- CCD Yield
 - In two weeks we should have another meeting on the yield to clarify which pixels should be counted as bad, misunderstood and good.
 - Then we have to figure out how to explain it to reviewers AND apply it to our devices
- Filter group nearing completion of scientific analysis and specification of band passes
 - Starting to think about ordering a “prototype” filter
- Conceptual design of mounting system for F/8 mirror is in progress – if successful we can avoid the top-end flip and simplify cable and cooling pipe routing.



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More Up-coming Meetings and Workshops

- Collaboration Meeting in London Sept. 10-12!
- SISPI workshop at Fermilab: June 28th 7th floor crossover
 - Video: Dial 88337 at 348kps
Audio: Call 510-883-7860 then 88337#
- Cooling workshop in July/August, External review in Sept.
 - Herman, Rich and Dave are assembling documentation. Will set a date for the workshop next week.
 - CTIO participation is important!
- Brenna, Darren and John will go to CTIO ~ Aug 20 to work out many technical details on CFIP/ DECam interactions and DM-NOAO interactions



Schedule

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- In the next week the L2 managers will status the schedule through June.
- Then Dale will calculate the earned value
- We will make the final reality adjustments before the end of July.
- August 1st we will switch to Project funds
- Discussing with Ellie and Dale what to do with the historical Generic R&D tasks.
- Will start having weekly L2 managers meetings to focus on schedule