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# Recommendations from the joint DOE-NSF review: Science and Data Management

DES Working group meeting of  
May 18, 2007



# Outline of my presentation

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- Recommendations from the Science Section (2.0)
- Recommendations from the Data Management and Simulation Section (3.4)
- Comments on the recommendations relevant to DES Project Office and DES Council



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# Recommendations on the DES Science

- Explore a program to improve Blanco telescope image quality from 0.9" to 0.7" Evaluate such a program in terms of incremental cost to the project, incremental science gains, and the possibility of real improvement in the image quality.
- Convene an NSF, NOAO, and DOE common users advisory group to recommend the U.S. user's community needs for the use of DECam.
- Resolve science overlap between DES science goals and user community science goals in the case where the user community proposes for time on DECam to do the DES science.
- Actively review progress of competitors to maintain timeline towards scientific goals



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## Recommendations on the DES Science (cont'd 2)

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- Determine the uniqueness of the science beyond achieving the factor of three goal of Stage III experiments.
- Consider making the goal of one percent relative photometry as best effort goal with two percent minimum goal.
- Review and expand the goals of the supernova science component. Consider varying the cadence of data in the wide field survey to maximize sensitivity to SN science.



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# Recommendations on the DES Science (cont'd 3)

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- Organize a coordinated theory group across all the science projects.
- Create a plan for the DES if the SPT telescope for some reason does not deliver the SZ clusters.
- Produce quantitative goals for the improvement of systematic errors for the Stage IV experiments, as outlined in the DETF.



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# Recommendations for Data Management and Simulations

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- Define the scope of, and requirements on, the science-ready data products.
- Use these to prepare a requirements document for the simulations, data reduction and data management.
- Include all parts of the pipeline needed to generate science-ready DES data products in the data processing WBS (and requirements).
- Strengthen the astronomy/image processing group responsible for the core data reduction.



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# Recommendations for Data Management and Simulations

- Include the data reduction in the end-to-end error budget.
- Develop a characterization of the computational complexity of each the data reduction tasks (including its scaling, prefactor, efficiency on base architecture(s) and memory footprint).
- Identify potential consequences of the chosen framework, and develop plans to minimize possible negative impacts.
- Define the specification of the community pipeline. The Committee urged NOAO to work with the DES team to define an appropriate level of functionality for this pipeline to maximise the scientific return to the entire astronomical community of the DECam on the Blanco telescope.



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# Recommendations on Project Management for DES

- Form a resource management board with director level persons from the primary institutions. (from section 5) – *DES Council*
- Develop and finalize a complete set of MOUs with annually revised appendices describing scope of work and management details at all necessary levels of the DES project before the DES Project review for CD-2.
  - These MOUs must include the principal laboratory directors MOU (FNAL/NOAO/NCSA)- *DES Council, DES Project Office, JOG*
  - and all additional collaborating institutions with in-kind contributions. *DECam Project Office and DES Project Office*



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# Recommendations on Project Management for DES (cont'd)

- Provide additional systems management resources at the highest level of the DES Project to ensure complete and proper delineation and integration of the three projects before the next DOE/NSF review. *-DES Project Office, the project offices and Science Committee.*
- Separate into a minimum of two separately controlled documents the fundamental scientific requirements and derived technical specifications before July 1, 2007. *-DES Project Office, the project offices and Science Committee.*



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## Recommendations on Project Management for DES (cont'd)

- Develop and implement a project monitoring and control approach, that may includes low-level milestone tracking, for Data Management and CTIO Improvements that will ensure the timeliness of progress of explicitly funded and in-kind contributions that make up the balance of these two projects before the next DOE/NSF review. – *DES Project Office, DESDM, and CTIO.*



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# Formation of a Joint Oversight Committee

Dear John,

In accordance with the recommendation of the recent joint DOE/NSF review (Recommendation 7 on page 50 of the draft report from May 11th), the agencies have formed a Joint Oversight Group (JOG) to act as the official contact point between the agencies and the DES Project Director, Dr John Peoples. All formal communications will be handled by the JOG and the Project Director: all other contacts should be considered unofficial.

Current membership of the JOG is Dr Kathy Turner, DOE (Kathy.Turner@science.doe.gov) and Dr Nigel Sharp, NSF (nsharp@nsf.gov). The JOG will be contacting you soon.

With Regards,  
Wayne Van Citters and Robin Staffin

John Peoples May 18, 2007