APPENDIX A

CHARGE MEMORANDUM
The Department of Energy (DOE) Division of High Energy Physics (DHEP) requests that a Review of the R&D for the Supernova/Acceleration Probe (SNAP) experiment be conducted July 9-11, 2002 at Lawrence Berkeley National Laboratory. SNAP is a proposed, space-based experiment designed to discover and precisely measure thousands of Type Ia supernovae (for more information, see http://snap.lbl.gov). From the data collected, it will be possible to precisely measure the equation of state of the universe, measure the history of its accelerations and decelerations and to study both the dark energy and dark matter in the universe. The main feature of the apparatus is a 2-meter wide-field telescope with a half-billion-pixel camera launched into earth orbit.

The SNAP R&D program was initiated under guidance from the Scientific Assessment Group for Experiments in Non-Accelerator Physics (SAGENAP) panel. The High Energy Physics Advisory Panel’s 2001 subpanel, chaired by Professors J. Bagger and B. Barish, endorsed funding of the R&D phase of the program and preparation for conceptual design activities. The National Academies Committee on the Physics of the Universe, chaired by Professor Michael Turner, has recently called for a “wide-field telescope in space to determine the expansion history of the universe and fully probe the nature of the dark energy”. The NASA/Structure and Evolution of the Universe roadmap committee is now on record endorsing similar science goals (though they did not call out a specific mission design). The SNAP R&D program and other activities related to developing the foundation for a possible fabrication project have reached the stage where an extensive review of the progress and R&D plan is necessary.

The subject of this Review is the SNAP R&D in its current pre-conceptual design phase and its preparations to start the conceptual design phase in the future. The review Committee is asked to carry out an integrated examination of each subsystem, the technical progress overall, and the cost, schedule and management planning of the R&D program. In addition, the Committee is asked to comment on the effectiveness of SNAP in moving the project to the conceptual design phase in the future.

In performance of a general assessment of progress, current status, and the identification of potential issues, the committee should address the following specific items:
1. Does the proposed project meet the scientific objectives described by the Turner panel report?

2. Can the suite of instruments proposed carry out the scientific program proposed?

3. For this instrument concept, does the R&D plan address the appropriate technical issues?

4. Is the cost estimate consistent with the planned R&D program?

5. Have the major risks and uncertainties been adequately identified for the current stage of the proposed project? Is the contingency adequate for the risk?

6. Is the proposed schedule reasonable and appropriate in view of the necessary R&D tasks and projected funding profiles?

7. Is the management structure adequate and appropriate for guiding the proposed project through to a future conceptual design phase?

Kathleen Turner is the program manager for SNAP in this office and will serve as the DHEP contact person for the review.

We appreciate your assistance in this matter. As you know, these reviews play an important role in our program. I look forward to receiving your Committee’s report.

You are asked to submit a formal report to DHEP by September 9, 2002.

cc:
K. Turner, SC-221
M. Procario, SC-221
P. Rosen, SC-20

John R. O’Fallon  
Director  
Division of High Energy Physics
APPENDIX B

REVIEW PARTICIPANTS
Department of Energy Review  
of the  
Supernove/Acceleration Probe (SNAP) Experiment  
July 9-11, 2002  

Daniel R. Lehman, DOE, Chairperson  

<table>
<thead>
<tr>
<th>SC1</th>
<th>SC2</th>
<th>SC3</th>
<th>SC4</th>
<th>SC5</th>
</tr>
</thead>
</table>
| Science Requirements  
(WBS 1.2 and 2.5) | Space Systems (WBS 1.3, 2.1, 2.3.5, and 4.0) | Telescope  
(WBS 2.2) | Instrument  
(WBS 2.3) | Ground Segment/Computing  
(WBS 3.1, 3.2, 5.0) |
| * Charles Baital, Yale  
Andy Albrecht, UC Davis  
Kim Griest, UCSD  
Peter Stockman, STScI | * Scott Lambros, GSFC/NASA  
Andy Gerber, JPL, NASA | * Eri Cohen, JPL/NASA  
Scott Smith, MSFC/NASA | * James Beletic, Keck Observatory  
Gunther Haller, SLAC  
Bruce Woodgate, GSFC/NASA | * Joel Butler, Fermilab  
Robert Lupton, Princeton |

<table>
<thead>
<tr>
<th>SC6</th>
<th>SC7</th>
<th>Observers</th>
</tr>
</thead>
</table>
| Cost/Schedule/Funding  
(WBS 1.1) | Project Management  
(WBS 1.1) | |
| * Bill Freeman, Fermilab  
Steve Tkaczyk, DOE/SC | * Marty Breidenbach, SLAC  
Marty Davis, GSFC/NASA | Aesook Byun-Wagner, DOE/SC  
Dave Goodwin, DOE/SC  
John O’Fallon, DOE/SC  
Kathy Turner, DOE/SC  
Joe Krupa, DOE/LBNL  
Jay Frogel, NASA HQ |

**Legend**  
SC Subcommittee  
* Chairperson  

Count: 18 (excluding observers)
APPENDIX C

REVIEW
AGENDA
Department of Energy Review
of the
Supernova/Acceleration Probe (SNAP) Experiment

AGENDA

Tuesday, July 9, 2002—50A-5132, Director’s Conference Room

8:00 am  DOE Full Committee Executive Session ..........................Daniel Lehman
         9:00 am  Welcome .........................................................Pier Oddone
         9:05 am  Science Overview ................................................Saul Perlmutter
         9:50 am  Mission Overview .................................................Michael Levi
       10:35 am  Break
       10:50 am  Weak Lensing Science R&D .......................................Richard Ellis
       11:15 am  R&D Plan Management .............................................Peter Harvey
       11:35 am  Instrumentation ..................................................Chris Bebek
       12:30 pm  Lunch
       1:30 pm  IR Detector R&D ....................................................Greg Tarle
       2:00 pm  Electronics .......................................................Natalie Roe
       2:30 pm  Spectrograph .....................................................Eric Prieto
       3:00 pm  Break
       3:15 pm  Telescope ........................................................Michael Lampton
       3:50 pm  Systems Engineering ..............................................David Pankow
       4:30 pm  DOE Subcommittee Executive Sessions
       5:00 pm  DOE Full Committee Executive Session
       6:30 pm  Adjourn

Wednesday, July 10, 2002

8:30 am  Ground Systems/Computing .........................................William Carithers
         9:15 am  Simulation .........................................................Gary Bernstein
        10:00 am  Break
       10:15 am  Subcommittee Working Sessions (SC1/2/4, other subcommittees will join SC1/2/4)
       12:00 pm  Lunch
       12:45 pm  Subcommittee Working Sessions (all subcommittees will meet individually)
       3:30 pm  DOE Subcommittee Executive Sessions
       4:00 pm  DOE Full Committee Executive Session
       7:30 pm  Adjourn

Thursday, July 11, 2002

8:30 am  Subcommittee Working Sessions
        11:30 pm  Lunch
       12:00 am  DOE Full Committee Closeout Dry Run
            3:00 pm  Closeout Presentation to SNAP Management
        4:00 pm  Adjourn
APPENDIX D

COST TABLE
and
SCHEDULE CHART