
AOWG Minutes 08/24/05

KSM Strategic Planning session: Preparation, KPAO/MOAO/MCAO

Max: could do MCAO and/or MOAO using KPAO's tomography system
  --> will do MCAO summary

Rich: have been thinking about MOAO for TMT
  in the process of developing 4 core science cases for TMT/MOAO
  an issue for Keck is the areal density of objects
  --> will send link for TMT/MOAO science case

  cost estimates:
    by Dekany:
      KPAO relay feeding either OSIRIS or MOAO backend $29M
         (includes $15M for sodium lasers,
          no telescope re-engineering,
          $2M for summit commissioning)
      Backend: N=16 NIR IFU Multiobject Spectrograph $11M
        assumes cost savings of several $M if built concurrently with KPAO
      cost drivers are MEMS DMs and image slicers
    by Neyman:
      KPAO relay feeding OSIRIS $25M
         (includes $15M for sodium lasers)

    Rich & Chris have compared notes and concluded their KPAO estimates
       were equivalent at this level of fidelity (which itself depends
       on several floating requirements).

    ($5.5M for 50W CW laser for Gemini-South)

  MOAO/Keck: 6' diameter FOV, 4um MEMS stroke required & feasible
           EE~50% in 0.05"
           1.5" FOV for each spectrograph

Bruce: for MCAO, look at GSAOI science case
     --> Bruce will share conceptual design version
Matthews: GLAO instruments get very big - problematic.
Max: site conditions matter a lot
     e.g. GLAO won't make much difference at Las Campanas
Bruce: need better site data
Max: let's not think about GLAO at the moment, as Gemini has done

Koo: circulate a poll at Keck Science Meeting
  other info?
  opportunities?
  whether people need more time to think about it ...
  --> web survey?
  --> verbal exchange
  --> was past circulated UCOAC poll effective?

Rich: do we need to modify/expand the KPAO Functional Requirements document?
(KAON 237 document)

Mike: What are the key questions we want answered from the KSM session?
Max: (1) would you use this AO concept+instrument?
(2) are the presented science cases sufficiently compelling?

Summary of KPAO work to date

Flicker: KPAO update
past work has been done with 180 nm error budget --> relatively easy
current work is on 120 nm error budget --> very hard
has been main area of Rolf's focus
have included segment aberrations in Keck model
more realistic simulation algorithms
need to implement TMT sky coverage code (Chris Neymann's work)
--> send info for new KPAO web page which will be publically available

~~~~~~

Michael C. Liu
Assistant Astronomer
Institute for Astronomy email: mliu@ifa.hawaii.edu
University of Hawaii phone: 1 808 956 6666
2680 Woodlawn Drive fax : 1 808 956 9580
Honolulu, HI 96822, USA WWW : www.ifa.hawaii.edu/~mliu

~~~~~~

---------- Forwarded message ----------
Date: Wed, 24 Aug 2005 12:50:57 -1000 (HST)
From: Michael Liu <mliu@ifa.hawaii.edu>
To: Keck AO Working Group -- 'Bruce MacIntosh' <bmac@igpp.ucllnl.org>,
'James Larkin' <larkin@astro.ucla.edu>,
'Keith Matthews' <kym@tacos.submm.caltech.edu>,
'Mike Liu' <mliu@ifa.hawaii.edu>, 'Rich Dekaney'
<rgd@astro.caltech.edu>,
Antonin Bouchez <abouchez@astro.caltech.edu>, Claire Max
<max@ucolick.org>,
David Koo <koo@ucolick.org>, Franck Marchis
<fmarchis@berkeley.edu>,
Peter Wizinowich <peterw@keck.hawaii.edu>
Subject: action items

ALL: sketch "flagship science" cases for KPAO, MOAO, and MCAO for presentation at Keck strategic planning session next month (and to be a big step towards updating of the Keck AO strategic planning document, due in Sept/Oct).

Planetary: Bouchez (lead), Marchis
Galactic: Liu (lead), Macintosh
Extragalactic: Max (lead), Matthews, Koo, Larkin, Dekany

Each group should work to produce at least 1 extremely compelling science case for the 3 possible concepts (KPAO, MOAO, MCAO) along with an accompanying Powerpoint slide. Quality of science case more important than the breadth.

** Deadline: Monday, September 12 **

Dekany:
- make available TMT/MOAO science case
- circulate to AOWG a brief (1-2 par) summary of technical capabilities of Keck/MOAO suitable for drawing up flagship science cases

Max:
- circulate to AOWG a brief (1-2 par) summary of technical capabilities of Keck/MCAO suitable for drawing up flagship science cases

** Next telecon: Friday, September 16, 3 pm PDT (12 pm HST) **