science is very compelling. Making such large IR focal planes economically feasible in the near future.

(funded by the ATI program) is yielding suitable sensor material at much reduced cost per pixel, thermal foreground suppression, and validate the baffling scheme devised to reduce radiative

0.25" so our telescope will be diffraction limited most of the time.

than at temperate latitudes.

field of view by more than two orders of magnitude compared the current widest field instrument

The convex corrector can support vacuum even when scaled to > 1m aperture. This allows us to

wavelength where fused silica is transmissive and was in fact conceived for a transient survey

Instrumentation (ATI) has issued a grant to Caltech for the development of an innovative, scientific

Our expectation is that NGPS will transform optical spectroscopy at Palomar by greatly improving

planned.

position (track) on sky for the list of planned observations, modelling observation overheads and

all measured by the guide camera.

target is correctly positioned.

automatically during

accompanying figures), even without accounting for the reduction of slit losses afforded by the

dichroic coatings and suffer relatively low roll-off in grating efficiency due to the restricted

width can be reduced to 2 pixels delivering R = 6000 while also improving

conditions.

A 60" wide rectangular section of the telescope focal plane is subdivided into three slices by two

their science.

Finally,

improvement spanning 330 – 2400 nm wavelengths.

COO and NAOC/NIAOT are collaborating on the construction of a general-purpose spectrograph

Next Generation Palomar Spectrograph (NGPS) scheduled to replace DBSP in 2023.

Optical and infrared wavelengths from 330 – 2500 nm.

In addition to reducing slit losses, the 3-way slicer achieves R = 4600 with a relatively small (100

× 100

µm) beam which in turn allows a single element off-axis collimator to be used.

In this issue

Excluding the wide-field prime focus imaging

× 6K readout IC with the desired 10

µm pixel size,

Detectable wavelength ranges from 320 – 1030 nm.

provides simultaneous wavelength coverage from 320 nm to 1030 nm with R = 4600 in the

implementation of a four-channel design which makes use of the existing 4K

COO.

By Roger Smith (Caltech)

By Andy Boden (Caltech)

NSF Support Success

Cryogenic

By Roger Smith (Caltech)