







# DARK ENERGY SPECTROSCOPIC INSTRUMENT

U.S. Department of Energy Office of Science

DESIGN LOGICAL CONSTRAINTS - Aug 2024 X11 CNFP @ Crete, Greece, 2024

UdendentAndrade (UMichian)





2.5 3.5 3.9 **tension**



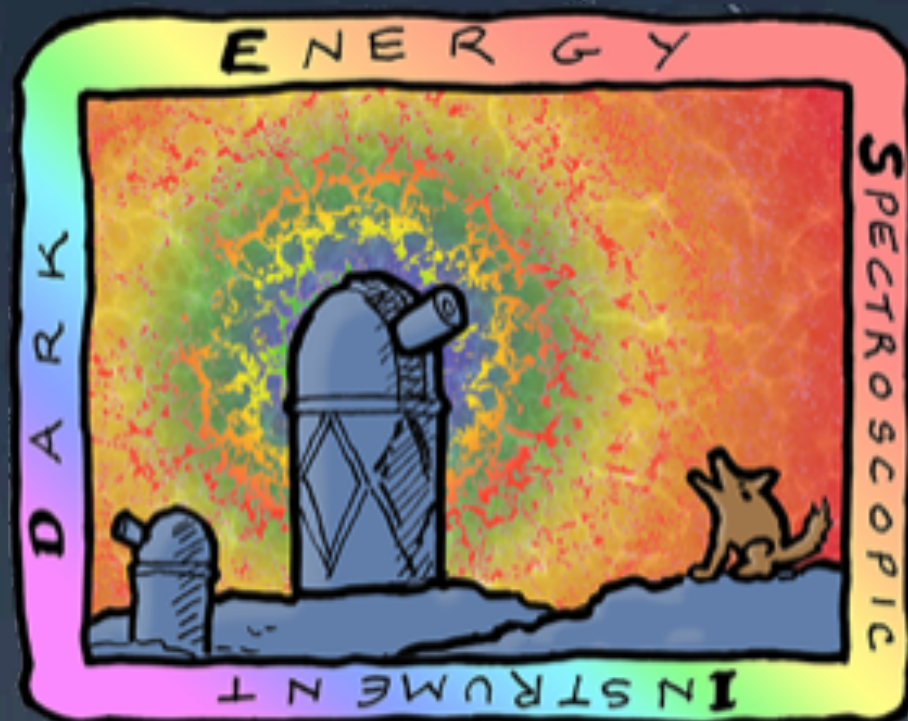
A Lot of work from a lot of people!!!!

# Summary

A **LOT** of work from a lot of people!!!

- DESI + BBN (+  $\theta_*$ ) constrains  $H_0$  to  $\sim 1\%$ ;  $3.7\sigma$  tension w/ SH0ES
- DESI, in combination with CMB data, favors zero spatial curvature
- DESI is consistent with  $w = -1$  when  $w$  assumed constant
- When  $w$  allowed to vary with time:
  - DESI combined with CMB:  $2.6\sigma$  tension with  $(w_0, w_a) = (-1, 0)$
  - Adding SN leads to **2.5, 3.5, 3.9 $\sigma$  tension** with  $(w_0, w_a) = (-1, 0)$ .  
(Discrepancy depends on the SN sample used)
  - Limit on  $\sum m_\nu$  improves to  $< 0.072$  eV(95 %,  $\Lambda$ CDM);  $< 0.195$  eV(95 %,  $w_0 w_a$ CDM)





# DARK ENERGY SPECTROSCOPIC INSTRUMENT

U.S. Department of Energy Office of Science



Thanks to our sponsors and  
72 Participating Institutions!

