

Major discoveries were "unscripted"

- CMB - antenna noise
- Quasars (massive BH) - radio source identifications
- Stellar BHs - X-ray source identifications
- Massive and mutable ν 's - checking solar model
- Neutron stars - lunar X-rays
- Pulsars - interplanetary scintillation
- Gamma ray bursts - nuclear weapons monitoring
- Dark matter - galactic and stellar orbits
- Cosmic acceleration - supernova explosions
- Gravitational lenses - quasar follow up
- Gravitational radiation - pulsar timing
- Massive black hole binaries - LIGO....

Discoveries at interfaces; stovepiping is futile

Central Paradox of Strategic Planning

- **October 2014 - April 2015 (APS):**
 - Planck results->standard model ($w, n_s, \Omega_b, \Omega_c, m_\nu, \dots$), dusty B-modes
 - 8 “habitable??” exoplanets->life in the universe???
 - 9 new dwarf galaxies -> dark matter limits
 - $\sim 10^{10} M_{\text{sun}}$ black hole at $z=6$ ->cosmic dawn
 - Gravitational lenses - SN, ALMA-> pre-SN, substructure
 - M82 neutron star with $L \sim 100 L_{\text{edd}}$ ->accretion physics
 - PD456 outflows->environmental impact, galaxy formation
 - FRBs 40% circ pol->new transients 10-100MHz
 - IceCube neutrinos -> cosmological origin?
 - ...

By contrast we are making science plans for 2030s