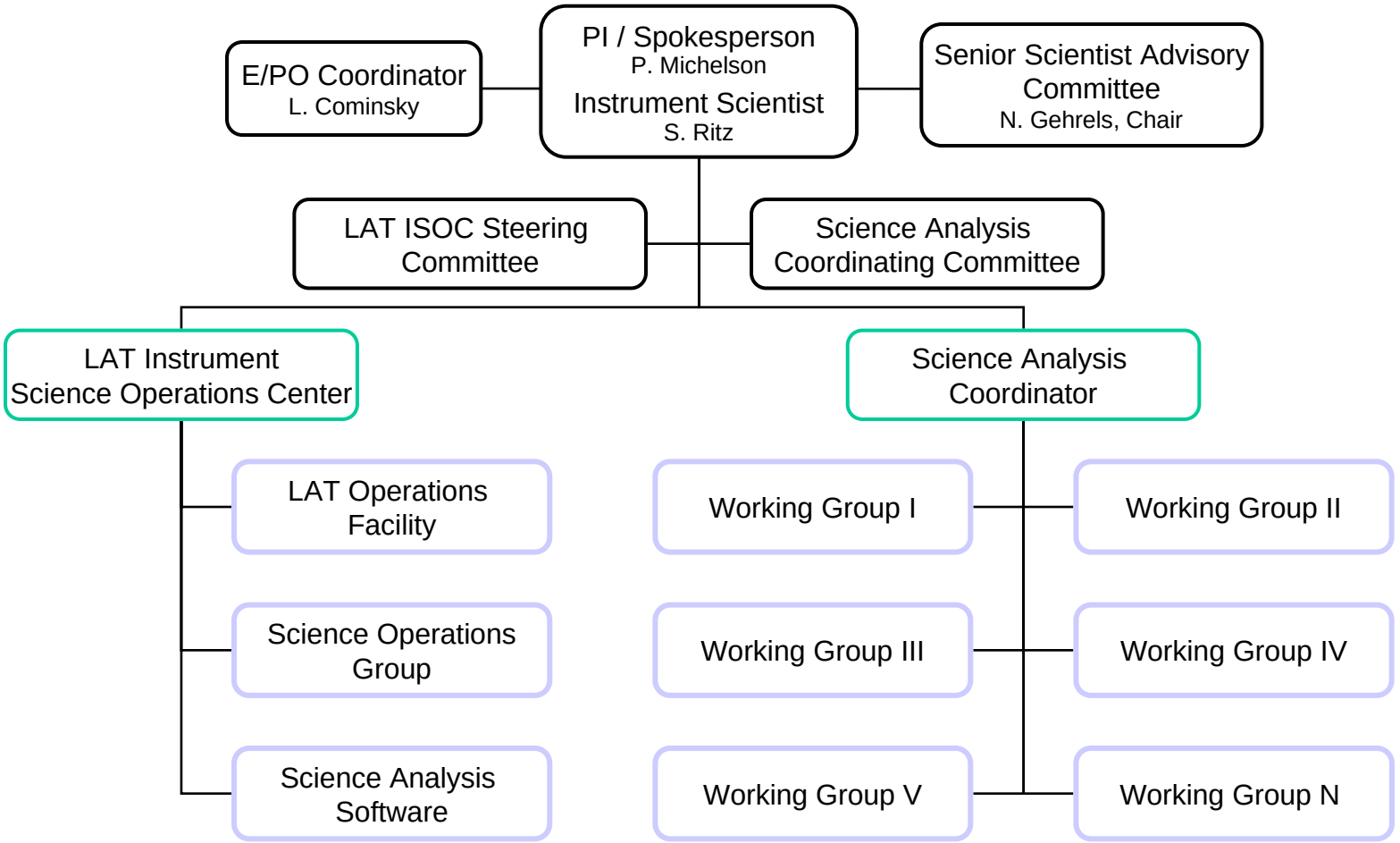
Discussion of Operations Phase Support

P. F. Michelson

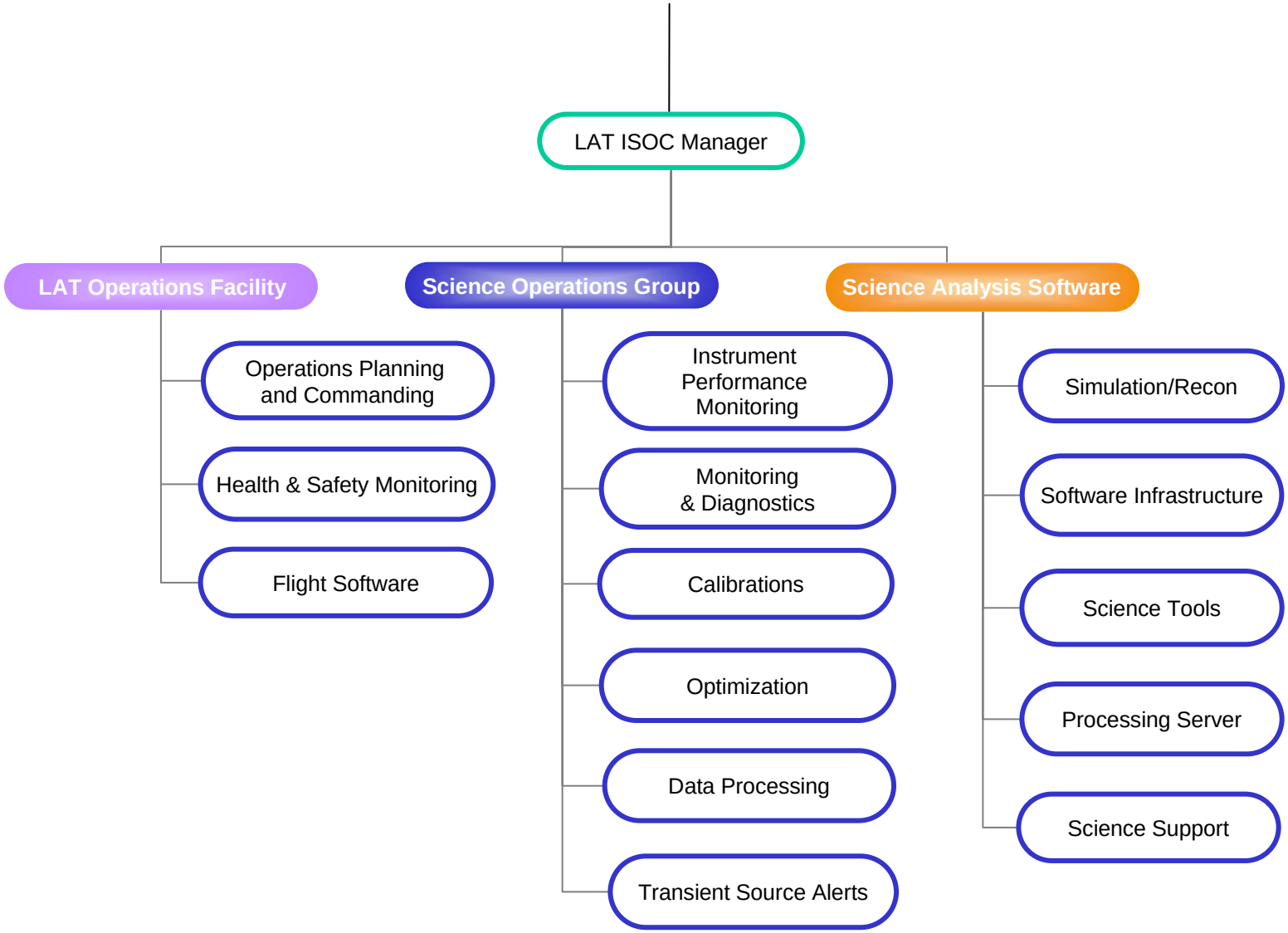
Stanford University

peterm@stanford.edu

Organization Chart: Operations Phase

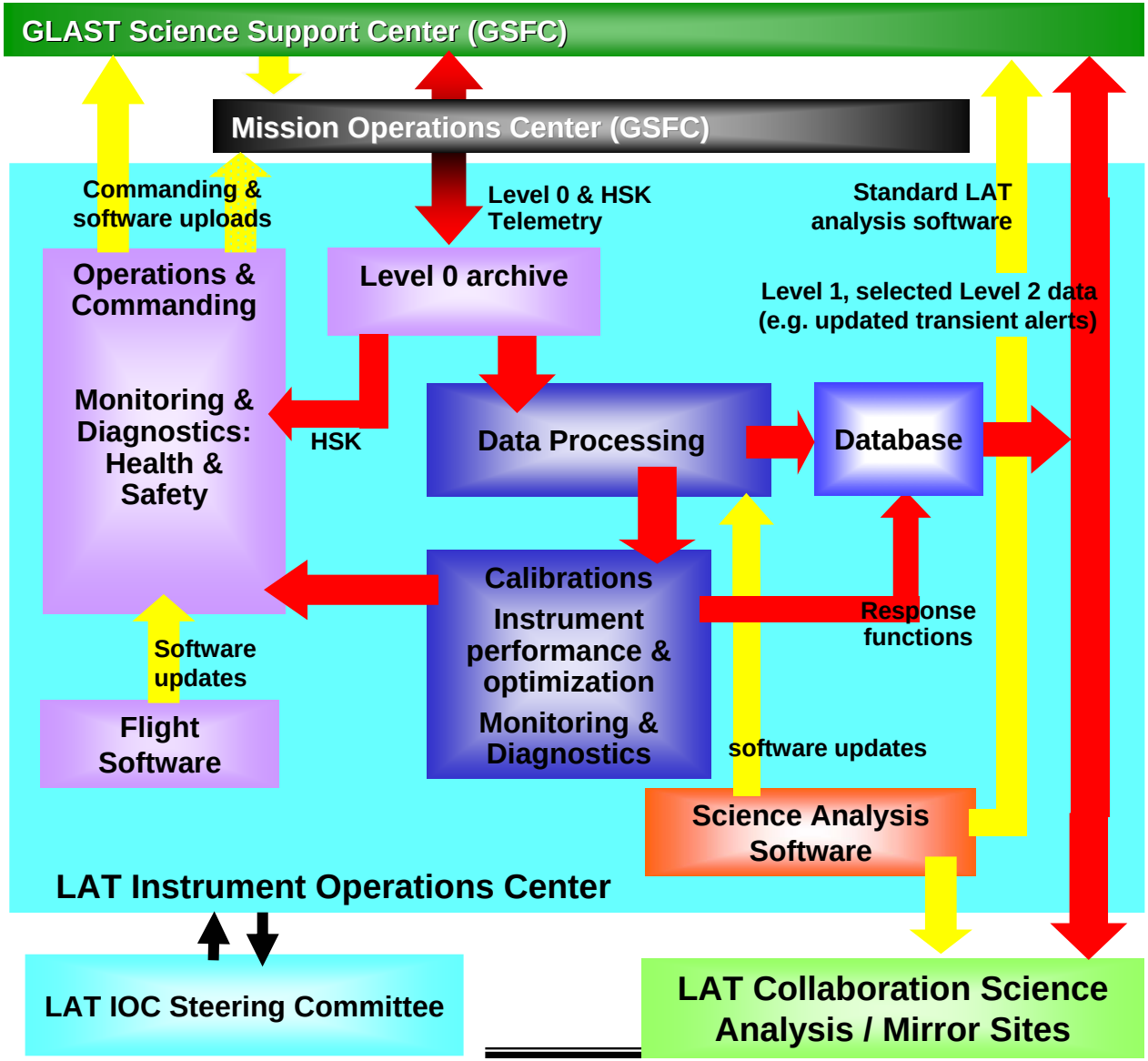


LAT ISOC Functional Organization Chart



LAT Instrument Science Operations Center

- Receive Level 0 data telemetry packets from MOC
- Perform science data production to generate Level 1 products
- Build and verify commanding plan for LAT instrument
- Support housekeeping monitoring of the instrument for health and safety
- Verify instrument performance and trending
- Archive all Level 0 telemetry packets and Level 1 products
- Develop (with SSC) Standard LAT analysis software
- Support LAT Collaboration science investigation



Operations Phase

- Instrument Science Operations Center
  - Core, time-critical functions will be located at Stanford University (SLAC and campus)
    - **LOF**: instrument command generation, flight software, housekeeping data evaluation; maintain test-bed
      - co-location essential
    - **SOG**: operates level-1 data processing pipeline, calibration; performance optimization
      - co-location of most activities; some can be distributed, particularly after year 1
      - core group needs active participation from 1-3 FTEs from each subsystem plus instrument system level analysts
      - Closely coordinated with LOF activities
    - **SAS**: provides off-line software development/maintainence support (including data pipeline)
      - More distributed than LOF or SOG; augmentation of on-site group needed

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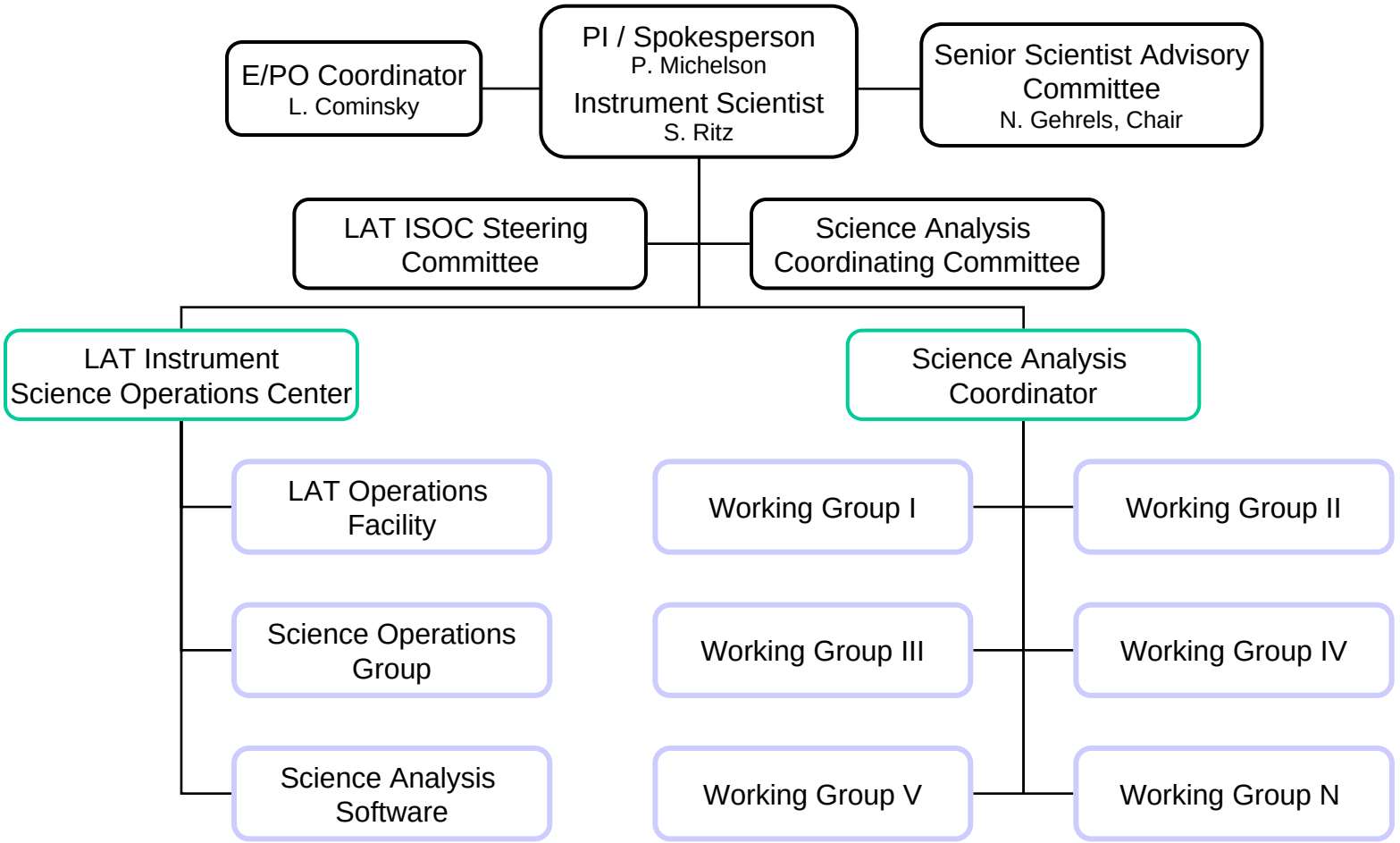

Current Collaboration Science Working Groups

I. Working Group I: Extended Sources and Diffuse Radiation
Galactic Diffuse Radiation and Emission from Normal Galaxies
Gamma-ray Emission from Molecular Clouds
Cosmic Ray Acceleration & Gamma-ray Emission from SNR shells & Plerions
High-Energy Emission from Galaxy Clusters

II. Working Group II: Galactic Sources and Unidentified Sources
Particle Acceleration and Gamma-ray Emission in Pulsars & Binary Systems
Unidentified Sources: Population Studies
Unidentified Sources: Radio/optical/X-ray identifications
High-Energy Emission from Stellar-Mass Galactic Black Hole Candidates
The Galactic Center

Positions of Analysis Coordinator and Coordinators of each Collaboration Working Group are collaboration positions:

III. Working Group III: Extragalactic Sources
Extragalactic Diffuse Radiation and LogN-LogS of Extragalactic Sources
Gamma-ray Emission Mechanisms in Blazar AGNS
Cosmic Evolution of AGN Blazars & Spectral Cutoffs: Population & EBL Studies
High-Energy Emission from Seyfert galaxies & Radio galaxies

IV. Working Group IV: Searches for New Physics
Searches for Dark Matter
Search for Signatures of Quantum Gravity
Search for Primordial Black Hole Evaporation

working groups will evolve between now and launch and during operations phase: planning led by Collaboration SSAC; anticipate ~10 groups

V. Working Group V: GRBs and Solar Flares
Gamma-Ray Bursts: Testing emission models; afterglows & multiwavelength observations
Solar Flares

Operations Phase

- Science Analysis Working Groups
  - Science Analysis Coordinator (rotating collaboration position; ~every year) resident at Stanford/SLAC
  - 2 co-leads for each working group with one resident at Stanford/SLAC; essential during first ~1.5 years of ops.
  - Working groups will produce science papers !!!

ISOC Personnel Needs

	# FTEs Total	# FTEs co-located @ SU/SLAC	non SU/SLAC FTEs
ISOC			
manager	1	1	
lead engineer	1	1	
LAT Ops. Facility (LOF)			
manager	1	1	
scientists	3	3	1
engineers	3	3	
programmers	1	1	
Science Ops. Group (SOG)			
manager	1	1	
scientists	9	5	6
engineers	1	1	
programmers	4	3	1
Science Analysis Software (SAS)			
manager	1	1	
scientists	20	10	12
programmers	7	2	2
Total	~53	~33	~22

Science Working Groups

	# FTEs Total	# FTEs co-located @ SU/SLAC
Science Analysis Coordinator	1	1
Science Working Groups (~10)		
co-lead	1x10	
co-lead	1x10	10
scientists	6x10	10
Total	~81	~21

Operations Phase resources

- SLAC/DOE operating budget support for SLAC scientists, level-1 data pipeline, and some ISOC personnel
- NASA Instrument Team support for Instrument Team activities at GSFC, NRL, Stanford; including scientists and some ISOC
- Operating Common Fund: possible uses
  - contribute to funding ISOC personnel costs,
  - computing for resident collaboration members (10-15 FTEs),
  - defray living expenses for long-term resident collaborators (e.g. Science Analysis Coordinator, Working Group co-leads)
  - publication costs, etc.