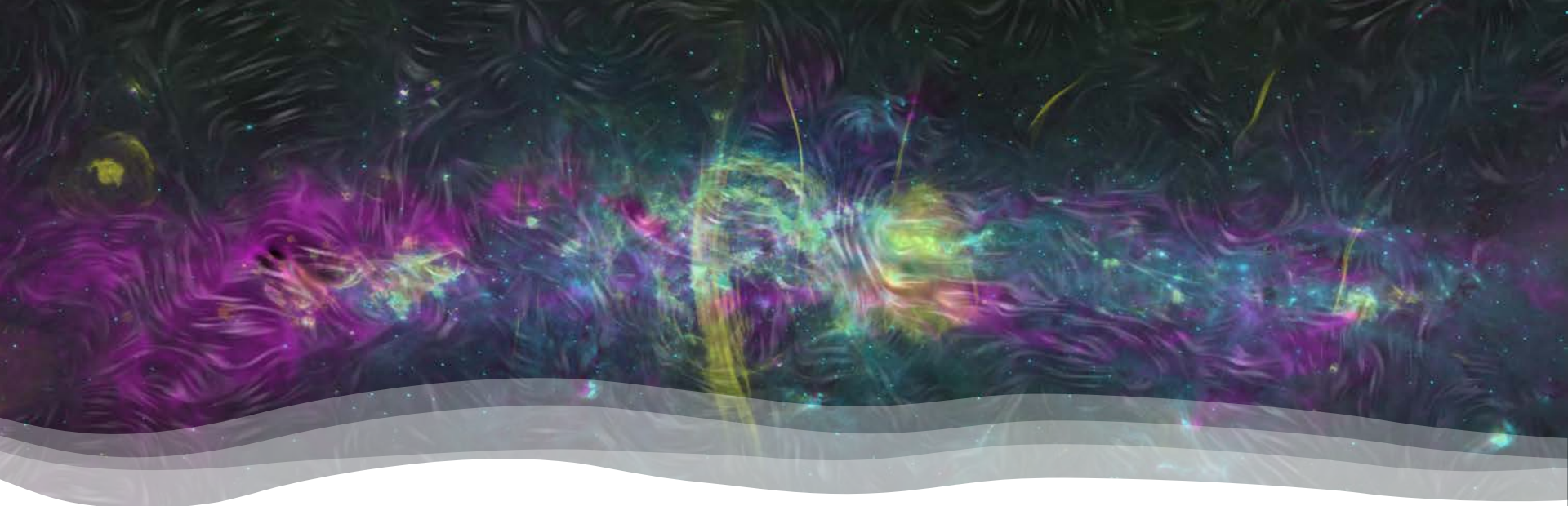

Magnetic Field in an Unusually Active Star-Forming Region in the Galactic Center

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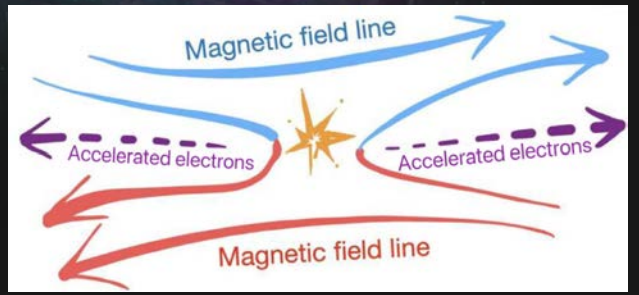
Background: Why Magnetic Fields?

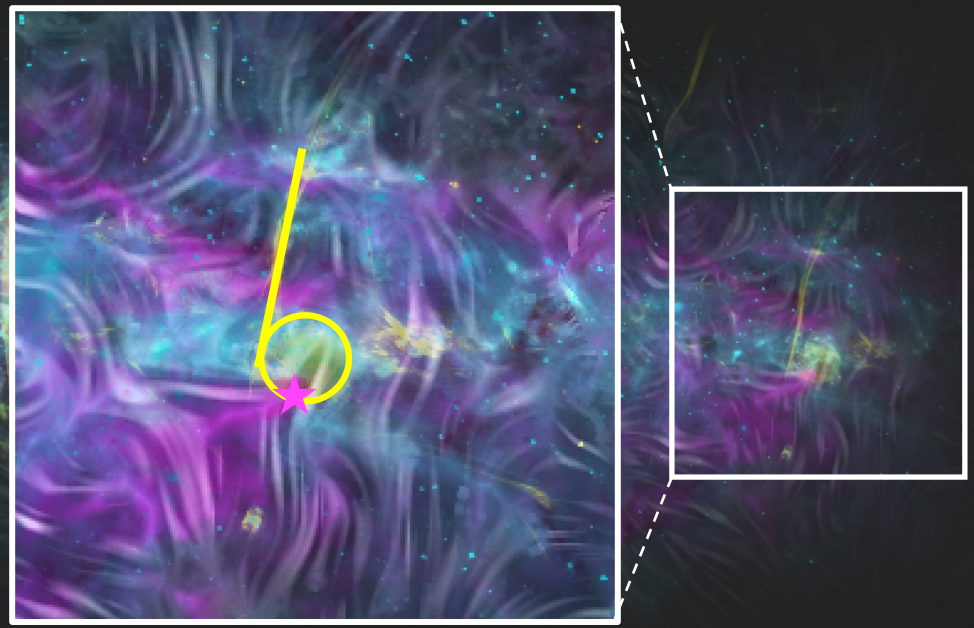
- **Thin Radio Filaments** in the Galactic Centre (in yellow)
- Multiple hypotheses:
  - **Magnetic Field** line reconnection
- Originates from **Ionized Regions**
  - Supply **Free Electrons**
- Depiction of dynamics:
  - Compression by stellar **Winds**
  - Clouds' internal **Motion**



*Modified from graphics from *Phys.org*

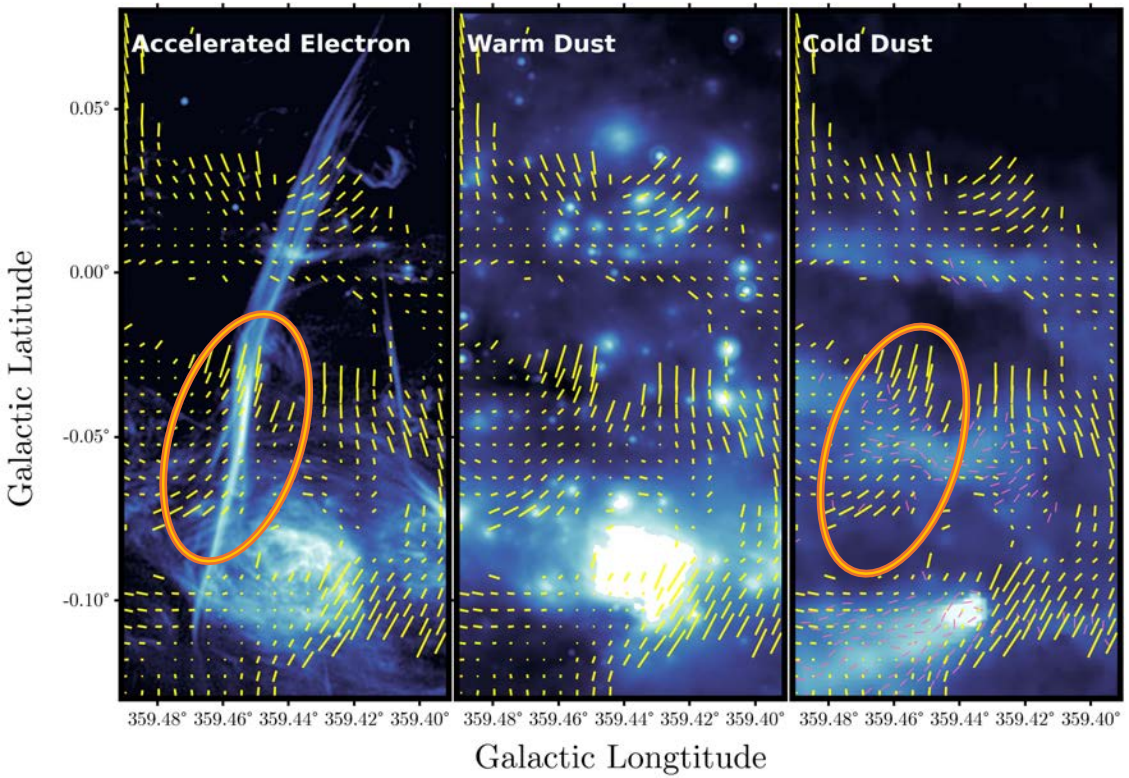
Sgr C: The Rosetta Stone

- Sgr C combines them all!
  - Shell-like **Ionized Region**
  - Prominent **Filament**
  - Large Molecular Clouds
  - Massive **Star-formation**



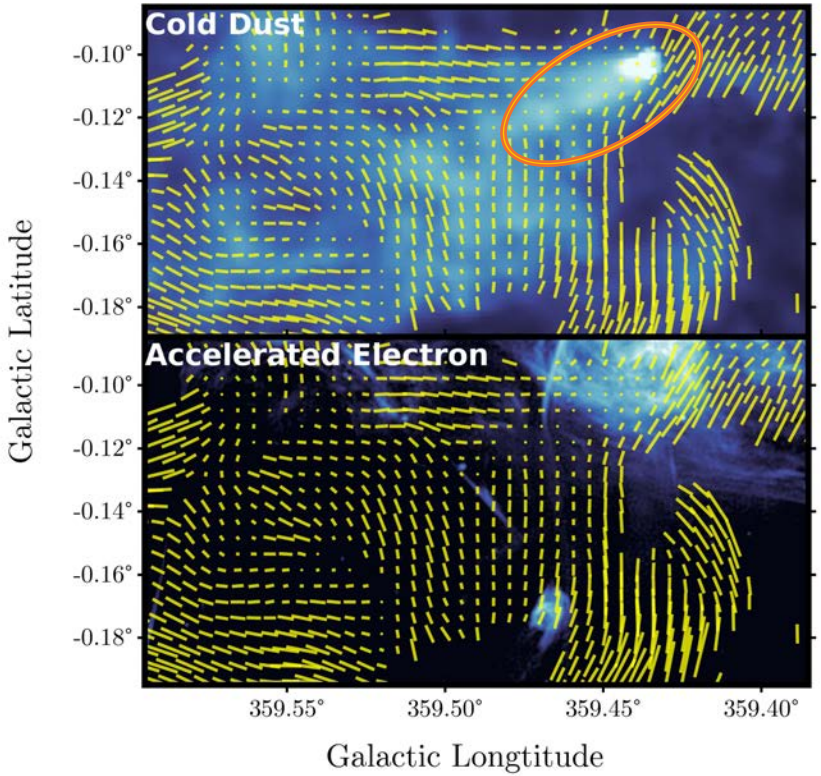
The Sgr C Filament

- In-cloud field follows the filament
- Compression around the ionized region
- Causes “impact” between two fields
- Supports “reconnection”



Sgr C: Star Formation + Cloud Dynamics

- Massive protostar formation present
- The field morphology:
  - Traces clouds' deformation
  - Compressed by ionized region expansion



Summary

- The magnetic field observation in Sgr C:
  - Is the best-suited example to study magnetic field
  - Indirectly support our theory of filament formation
  - Star-formation impacts the magnetic field
- The FIREPLACE Survey:

All FIREPLACE Publication and data on the NASA/IPAC Science Archive

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