

## 早期科学项目 58 (PID:3058)

### 摘要

AU-scale HII filaments and supernova remnants (SNRs) structures are the suspected culprit of pulsar extreme scattering events (ESEs) and scintillation arclets. The SNR S147 is a unique system, not only has lots of filament structures but also has PSR J0538+2817 located within its boundary. We detected interstellar scintillation (ISS) arc caused by the shell of S147 using the FAST telescope for the first time. We propose to study these arcs and pinpoint the AU-scale structure with scintillation observations of J0538+2817. The proposed multiple tracking observations will enable us to measure more accurate ISS parameters of J0538+2817 for studying the varying scales of the scattering medium and to obtain three-dimensional geometry of J0538+2817.