



# A BRIEF UPDATE ON A LEADING GNSS-RO 3U CUBESAT CONSTELLATION

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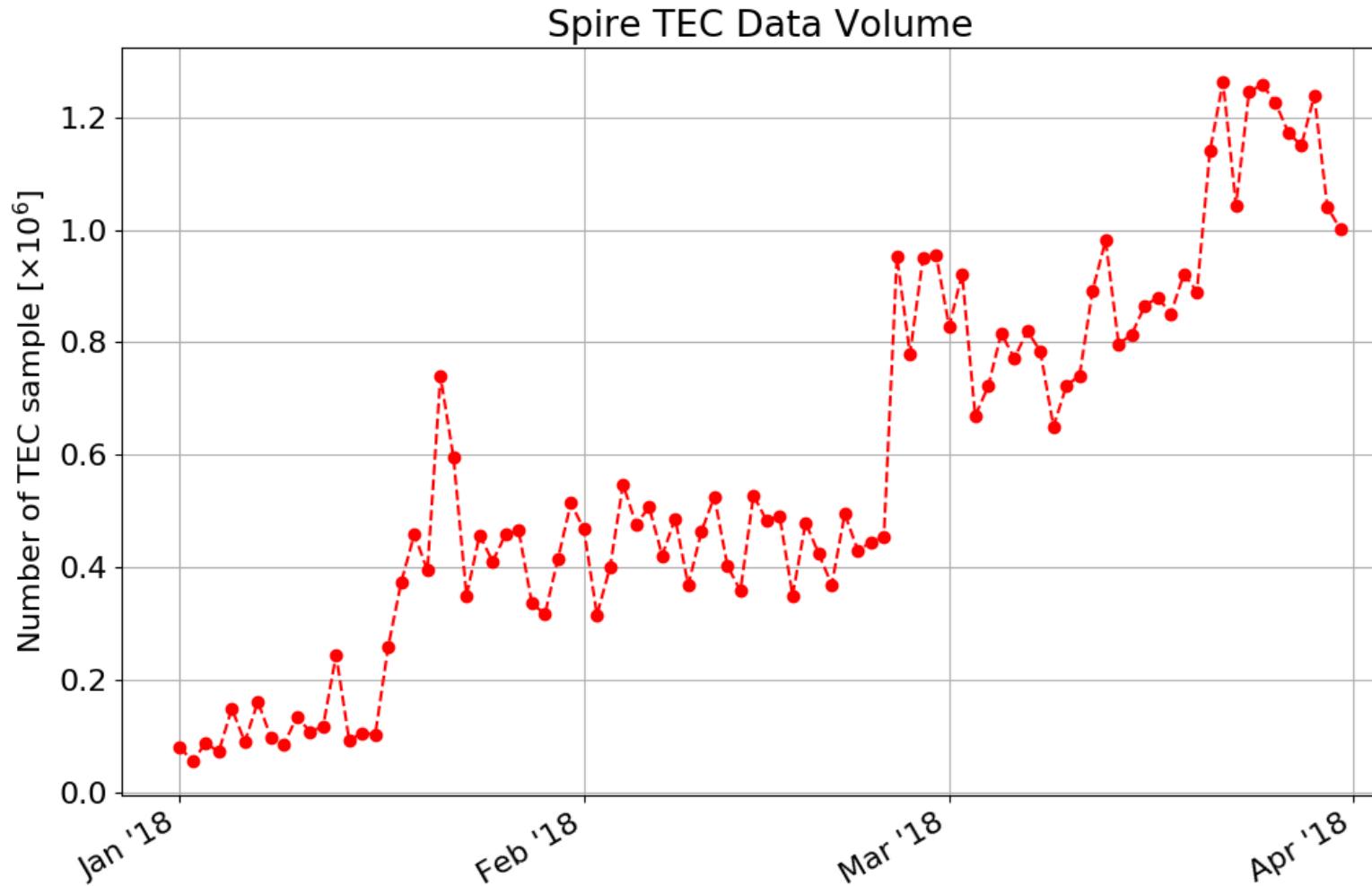
# SPIRE GLOBAL, INC.

- Leading player in nanosatellite sector
- Building the most advanced, constantly refreshed 3U satellite constellation
- Vertically integrated: design, build, launch, operate, and process data from 3U CubeSats
- Offices in Glasgow, Singapore, San Francisco, Boulder, and [Luxembourg](#)
- Providing rapidly refreshed data:
  - AIS (ship tracking)
  - ADS-B (commercial aviation tracking)
  - **GNSS Radio Occultation (RO)**
    - Participated in NOAA Commercial Weather Data Pilot (CWDP) in Spring 2017
    - Demonstrated feasibility of supplying high quality, commercial data to NOAA within a 3U CubeSat



*Satellite Production (up to 12 at once)*

# TEC DATA VOLUME



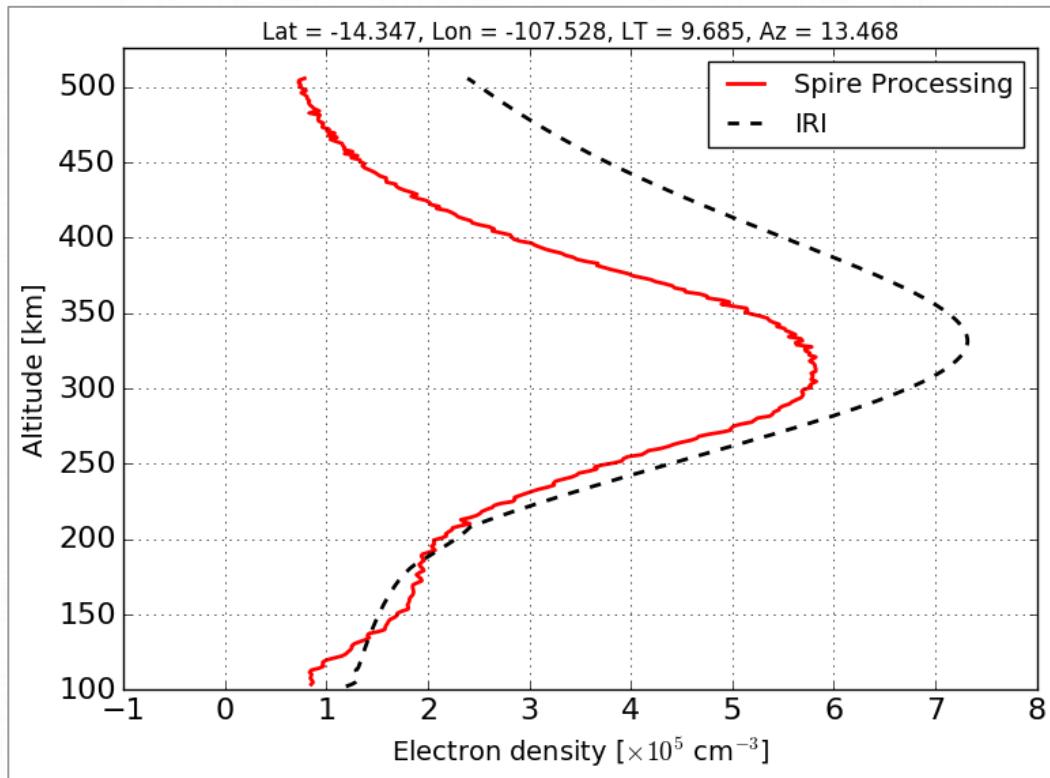
Production levels of TEC have increased since the beginning of 2018:

- New satellite checkout
- On-orbit software upgrades

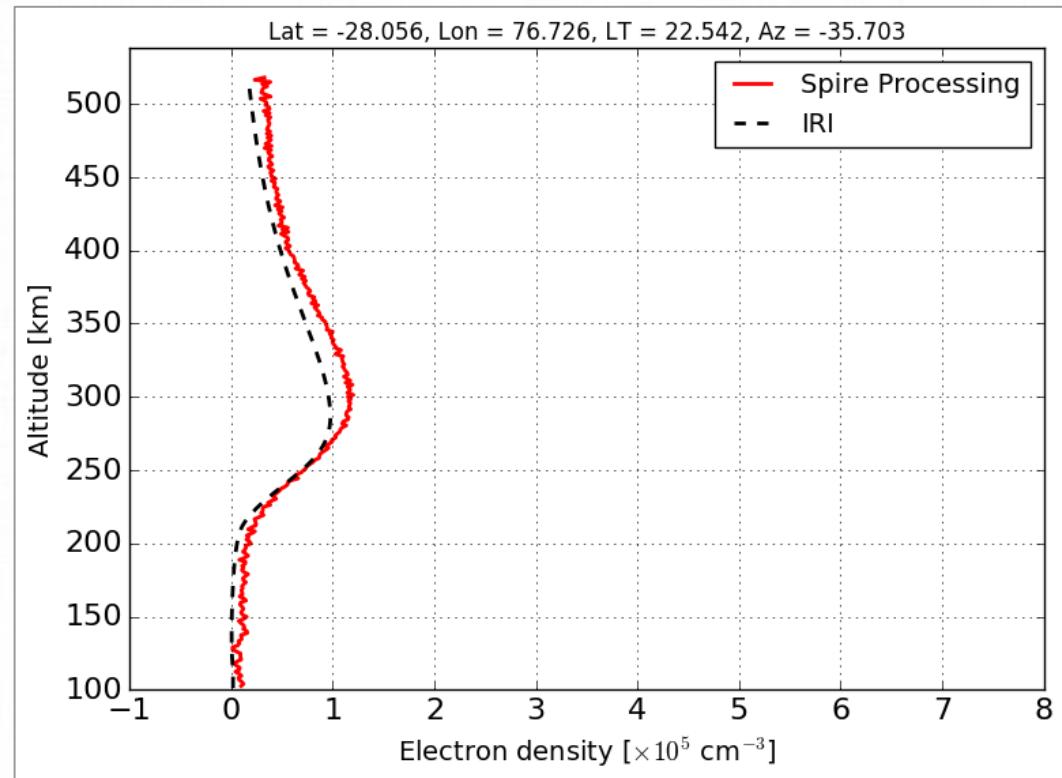
Expect further increases in 2018 due to future launches and optimizing duty cycle

# ELECTRON DENSITY PROFILES

Daytime



Nighttime



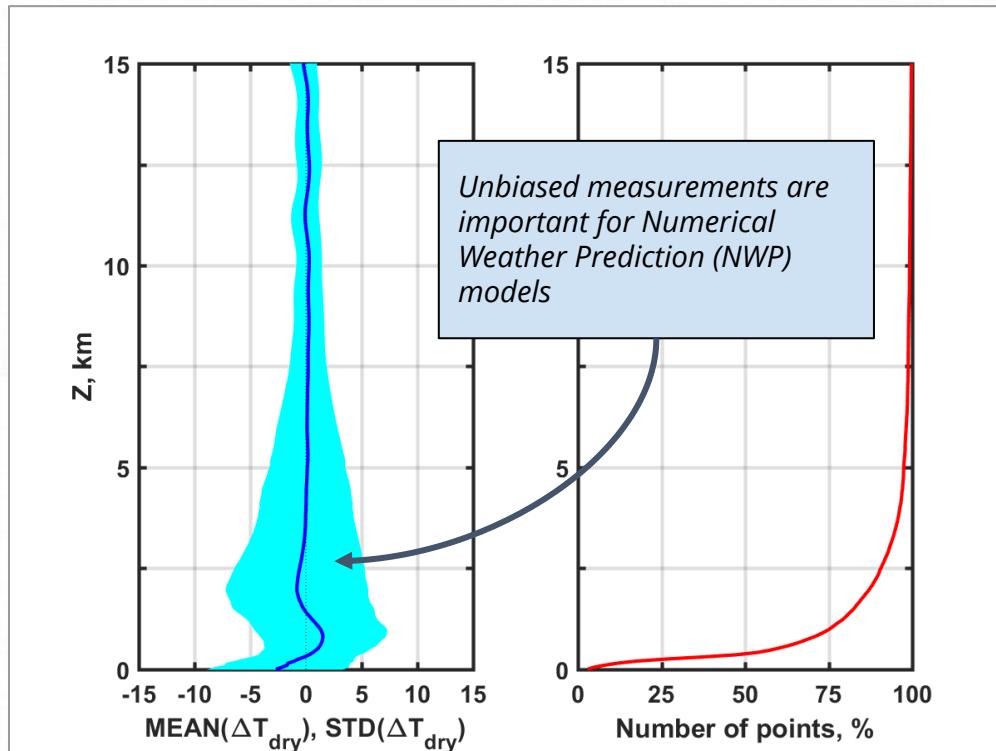
Developed prototype electron density inversion software for low elevation TEC measurements

# NEUTRAL ATMOSPHERE OCCULTATIONS

Spire

Spire Radio Occultation (RO) data  
are comparable to COSMIC-1

COSMIC-1

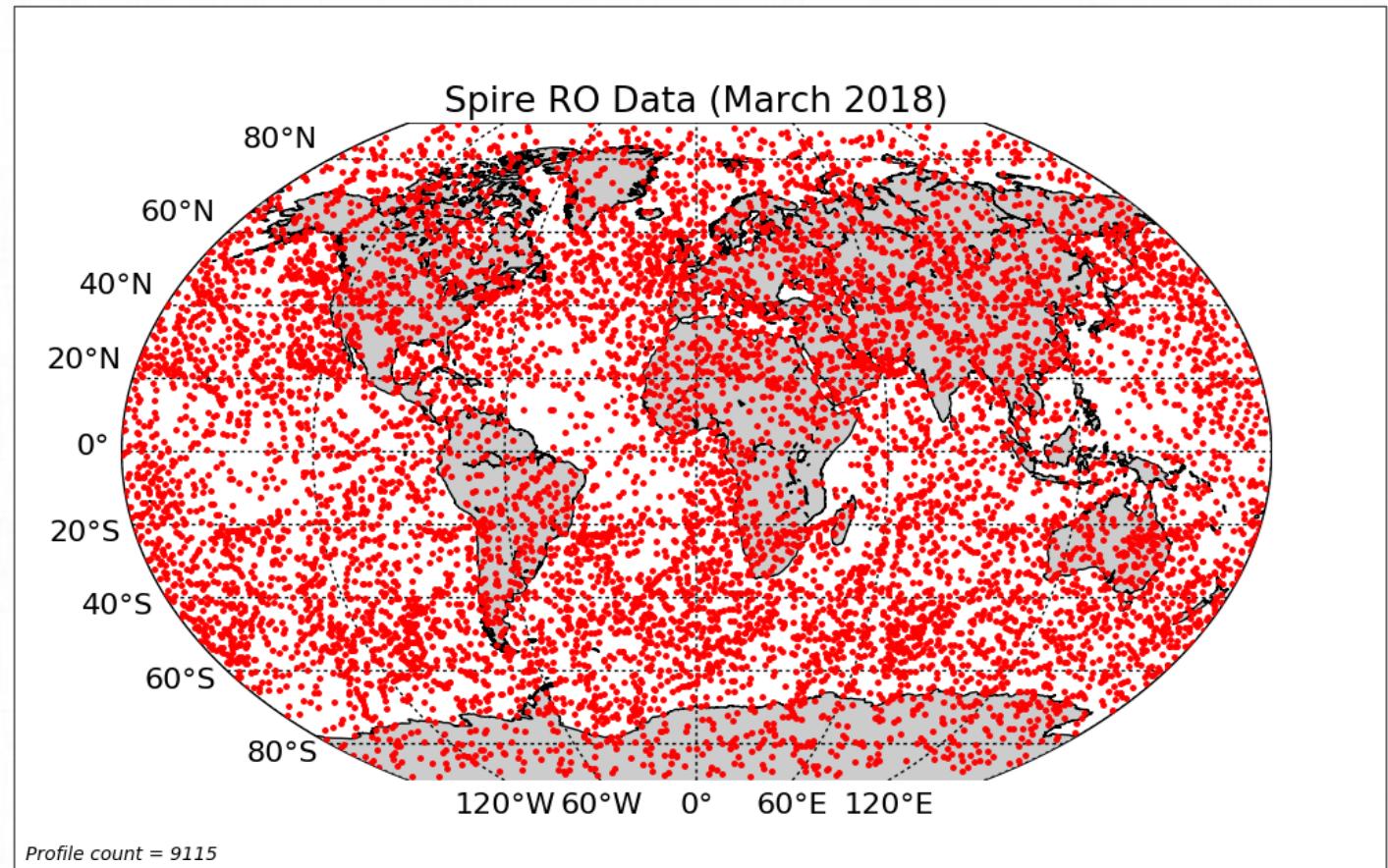


March 2018     $N = 6,748$  Profiles

Nov/Dec 2017     $N = 4,243$  Profiles

# OUTLOOK

- Validation of electron density profiles / improved algorithm development
- Increasing data volume
- Participation in CWDP Round 2 (RO & ionospheric data)
- Integration of TEC data into an ionospheric assimilation model



For any questions, please contact:

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