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Constellation of small satellites set to improve the skill of weather forecasts

SINGAPORE, March 20, 2017 (GLOBE NEWSWIRE) -- Spire Global has successfully developed, tested, and deployed a constellation of nanosatellites with high quality Global Navigation Satellite System (GNSS) receivers. The data from this growing constellation will augment the global observing system with a substantial number of high quality measurements (vertical profiles) of atmospheric temperature, pressure, and water vapour via GNSS-occultation.

Such vertical profiles with global reach have been shown by the international community to enable significant improvements in the skill of weather forecasts. The constellation announced today involves 8 satellites capable of producing a minimum of 1000 profiles each day while Spire's launch schedule aims to take this number up to at least 100,000 profiles a day within two years, providing a daily vertical sounding of the atmosphere in each 100km by 100km square over the entire planet. The methodology utilizes publicly-funded and publicly-available research and development on GNSS radio occultation (GNSS-RO) carried out by various research groups, including that responsible for the invaluable and ongoing COSMIC constellation. By innovative miniaturization and scaling-up of previous GNSS-RO programmes, Spire is now able to operate a constellation that can significantly enhance the global observing system used for weather forecasting, and offer the ability to directly access crucial data.

These valuable additional observations are part of Spire's data service available both to national weather services, who provide warnings of extreme weather events and many other invaluable functions, as well as businesses that need to enhance their operations and mitigate the ever-increasing impact of weather. Spire's flexible data access models conform to the World Meteorological Organization's Resolution 40, which governs the provision of meteorological data. For example, Spire's "purchase once, distribute everywhere" license allows for unlimited worldwide re-distribution, thereby enabling data to be free at the point of use for public weather predictions.

The skill of weather forecasts has improved substantially over the past decades, fueled by public funded research. However, particular - and sometimes extreme - weather event forecasts can be of less than desired quality because of insufficient observational data from space to initialize the computer models. The goal of Spire in establishing this new data service is to enable further enhancements in forecast skill, thereby allowing users to have even greater confidence in weather forecasts.

About Spire

Spire Global, Inc. is a leading player in the nanosatellite sector, building the world's most advanced, constantly refreshed satellite constellation. In an industry that is used to measuring progress & upgrades in years, Spire has accelerated timelines to a period of just

weeks. Spire's complete global coverage offers organizations insights into aircraft tracking, weather & climate, shipping & supply chain and maritime domain awareness. To learn more, visit: www.spire.com

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