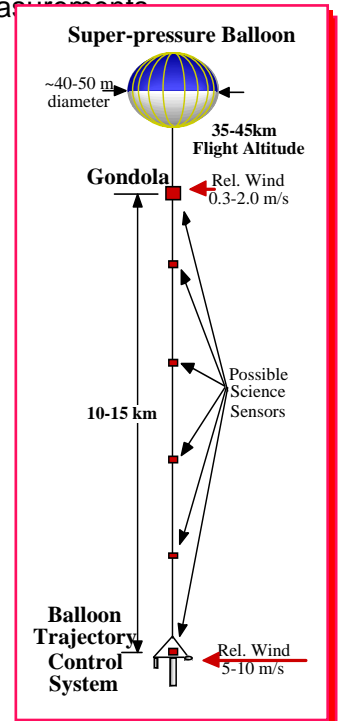
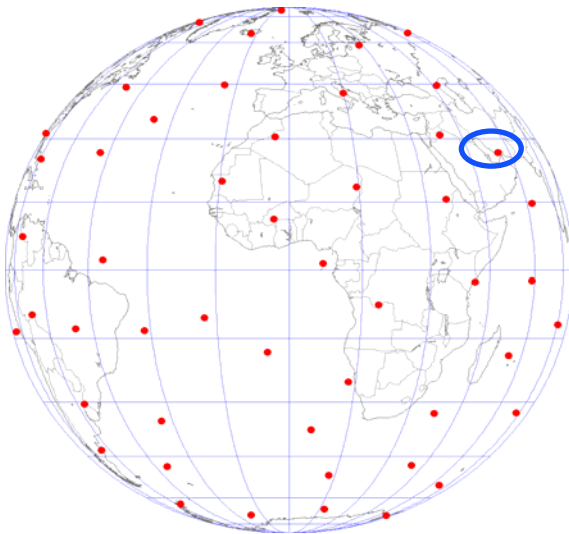


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 Global Aerospace Corporation
 “Global Constellation of Stratospheric Scientific Platforms”

Global Aerospace Corporation will be developing a revolutionary concept for a global constellation and network of perhaps hundreds of stratospheric superpressure balloons which can address major scientific questions relating to NASA’s *Earth Science Mission* by globally measuring stratospheric gases, collecting data on atmospheric circulation, observing the Earth’s surface, and detecting and monitoring environmental hazards. Such a system could replace satellites for making some environmental measurements.



The keys to this new concept are:

- Affordable, long-duration balloon systems
- Balloon trajectory control capability and
- A global communications infrastructure

In the nearly forty years since the launch of artificial satellites, there has been a shift away from making *in situ* measurements of the global environment to remote sensing from Earth orbiting spacecraft. Today, there may be reasons to challenge this remote sensing paradigm. In combination, (a) the advance of electronics, communications and balloon technologies, (b) the difficulty of doing some remote sensing, and (c) the interest in simultaneous global measurements, argue for a re-evaluation of the current reliance on satellites for many global environmental measurements.

Total system cost for a constellation of stratospheric superpressure balloons may be quite competitive with or even lower than comparable spacecraft systems due to the inherent high cost of getting to space. Indeed, a network of balloons will be less costly than a comparable network of spacecraft if the individual balloons have lifetimes measured on the order of years, thereby reducing the cost of replacement or refurbishment.

Developing technology for very long-duration and guided stratospheric balloons will enable an affordable global constellation of formation-flying, stratospheric platforms. The structure of the global constellation of balloons will be maintained by sophisticated trajectory control algorithms with inter-platform communication facilitated by the