



## Solar Flight unveils its 4th solar powered airplane Optionally manned High Altitude Platform, SUNSTAR

Ramona CA, October 29, 2014:

Solar Flight has released plans for their most advanced solar powered aircraft to date.

Drawing on 28 years of experience designing, building and flying solar powered airplanes, this new configuration offers more performance potential than any of the other projects now under development.

Compared to other solar UAVs being developed, the SUNSTAR promises higher flight speeds in a turbulence tolerant design, for operation in real world conditions.

Using extensive laminar flow techniques, the SUNSTAR takes advantage of sailplane aerodynamic design philosophy to achieve the lowest possible power requirement to maintain flight at high altitudes. It builds on the SUNSEEKER DUO design flying now, but takes it to a whole new level. As well as manned missions, the primary use of SUNSTAR is to act as an unmanned telecommunications platform, remaining on station for months at a time. Eric Raymond, President of Solar Flight explained, "What we are designing is known as an atmospheric satellite, which operates and performs many of the functions as a satellite would do in space, but does it in the atmosphere. Uplink and downlink speeds will be far better than a satellite, due to the shorter distance." One SUNSTAR aircraft can provide service over a large area on the ground, far greater than any land based tower.

To enable solar powered flight in the widest range of conditions, the SUNSTAR has the best coverage of solar cells ever achieved. A proprietary lamination of a new type of solar cell forms a perfectly smooth skin. For maximum power at low sun angles some solar arrays are mounted on the sides of the aircraft. A three motor configuration was chosen for maximum reliability. The front mounted motors and propellers are optimized for lower altitudes, for take off and climb. After the SUNSTAR reaches its operational altitude, these motors are shut down, and the propellers fold back, out of the airstream. Station holding is done with the single pusher motor, centrally mounted with a large diameter propeller, optimal for high altitudes. This central motor is designed for the low power cruise condition, for minimal power consumption while on station.

The SUNSTAR concept is a modular system which is configurable for a variety of missions. The central pod is interchangeable and options include a multi seat cockpit, or an un-manned instrument pod. A pressurized cockpit for the occupants is also in the planning stage. The wingspan can be changed for different missions, by eliminating some wing sections.

The SUNSTAR will be test flown initially with a pilot on board. From the beginning, all the controls will be "fly by wire". Optionally manned will be the first step toward fully autonomous operation. The inclusion of a manned cockpit in the prototype allows much more freedom in testing, considering the restrictions placed on un-manned aircraft over populated areas.

Prototypes of the systems for the SUNSTAR are already flying in Solar Flight's flagship, the SUNSEEKER DUO. Visit our web site for in flight video footage of our current State of the Art solar powered airplanes: [www.solar-flight.com](http://www.solar-flight.com).

Strategic partners are invited to help define mission specific optimization and bring the project to completion.

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Contact:

Eric Raymond  
President, Solar Flight Inc.  
Email: [info@solar-flight.com](mailto:info@solar-flight.com)