CLAIMS

1. A solar power panel failure search and detect system that performs detection of malfunction or failure sites of a solar power panel using a search unit installed in a remotely controllable aerial vehicle, which solar power panel failure search and detect system is characterized by comprising;

an aerial vehicle equipped with an on-board search unit and a flight control mechanism for effecting aerial gliding and/or hovering flight by remote control;

a ground-based control unit equipped with control means for controlling aerial vehicle course and flight angle, means for controlling / regulating angle of detection means installed in the aerial vehicle, receiver means for receiving search result data, and analysis means for analytically processing measurement results;

a search unit equipped with an angle sensor for detecting angle between a module surface and/or cell surface of a solar power panel and the detection means, adjustment means for varying angle of the detection means and/or the aerial vehicle to maintain the detection means at a fixed angle to the module surface and/or cell surface of the solar power panel during search, detection means for measuring / detecting heat amount of the module and/or cell of the solar power panel, and imaging means including a camera for imaging solar power panel condition; and

transmission means for transmitting search result data including measurement/detection values and image data to the ground control unit.

2. A solar power panel failure search and detect system of claim 1, characterized in that the search unit performs a search while maintaining optimum search condition by using an ultrasonic and/or laser beam to measure distance to a module surface and/or cell surface of a solar power panel and measure angle to the module surface and/or cell surface of the solar power panel.

3. A solar power panel failure search and detect system of claim 1, characterized in that the camera is a thermographic camera.

4. A solar power panel failure search and detect system of claim 1, characterized in that in order to pinpoint location of a malfunctioning or failed module and/or cell incorporated in a solar power panel, the search unit is equipped with a launcher for target irradiating a spot concerned with a laser pointer based on analysis results of the control unit and shooting a color marking ball.

5. A solar power panel failure search and detect system of claim 1, characterized in that the aerial vehicle is equipped with an obstacle detector that comprises ultrasonic sensors and/or lasers at multiple locations and, upon approaching an obstacle (solar power panel included) closer than a certain distance, produces a

warning sound and automatically modifies flight location.

6. A solar power panel failure search and detect system of claim 1, characterized in that, in order to protect the solar power panel and the aerial vehicle from a crash impact owing to failure or the like of the flight control mechanism, the aerial vehicle is equipped with an automatic accident avoidance mechanism for automatically activating / deploying an emergency parachute and/or airbag when an unflyable situation arises.