1. **Research Title:** Information and Fusion of Space Data

2. **Individual Sponsor:**
   Dr. Paul Havig, AFRL/RHWI
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   (Alternate POC: Dr. Vince Schmidt, AFRL/RHWI; vincent.schmidt@us.af.mil)

3. **Academic Area/Field and Education Level**
   Preferred: Computer Science/Computer Engineering (MS or PhD)

4. **Objectives:**
   The Warfighter Interactions & Readiness Division (711 HPW/RHW) requires a diverse collection of ground-based satellite images for research involving space situational awareness (SSA) and visualization. The objective of this research is to develop and demonstrate a native (in-house) capability to directly collect, process, analyze, and display ground-based images of satellites and space phenomena. This data will be utilized as inputs into SSA and visualization research activities. The research involves the selection (or fabrication) and installation of an appropriate collection of imaging hardware, software, and computational components that will make up a research image collection and processing testbed. In addition to providing timely and applicable research data, funding the proposed research will greatly improve RHW's ability to demonstrate the nature of the research cycle, from initial data collection, through processing and analysis, and into the SSA and visualization research products.

5. **Description:**
   Researcher will develop and evaluate techniques and algorithms for fusion of a variety of space data in support of Space Situational Awareness activities. Data may include multispectral images of a single space entity, multiple images of a single space entity taken over time, multiple images of a space entity taken at the same time from different locations, or similar instances. The results of this research will demonstrate practical mechanisms for visualizing fused space imagery. Imagery and non-image data may be collected using RHW's 17" CDK telescope, along with data from national or international research collaborators.

6. **Research Classification/Restrictions:** Unclassified, no restrictions

7. **Eligible Research Institutions:** Universities local to WPAFB preferred, but not required.

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