

Research Group of Advanced Aeronautical Photoelectric Imaging and Measurement Technology Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences



机载大视场立体航摄系统郑州航拍图像
Aerial image in Zhengzhou of airborne large field stereo aerial photography system



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This group took the lead in researching the mechanism, method and integrated manufacturing technology of aerial imaging from the late 80s of last century. They broke through the technical bottleneck of high performance aerospace imaging and measurement system manufacturing, and performed extensive utilizations. Also a first-class research team is formed, and an advanced research platform is built. Based on key-technology innovation, the manufacturing, environmental adaption, image processing and platform stabilization ability is enhanced to a world-class level. Some of the performances have reached world leading level. The group has established a comprehensive solutions of aerial imaging systems which can cover the whole airspace and time domain. The achievements have met the strong demand of national defense. The leap-forward development of aerial photoelectric imaging and measurement technology has also been realized which has made an outstanding contribution to our country.

Outstanding contributors of this research group

Jia Ping

As the leader and organizer of the group, he developed the theories and methods of multi-gimbal interference isolation inertial stabilization, established the long distance target tracking method in complex environment.

Ding Yalin

He established the theories and methods of large lenses and mirror support, compound multi-level thermal control, vibration reduction and sub-aperture self-collimation auto focusing.

Zhang Bao

He developed the technology of platform stabilization, airborne laser irradiation and infrared radiation measurement, electro-optical sighting and multispectral co-aperture imaging.

Major contributors

- Kuang Haipeng
- Liu Jinghong
- Zhang Hongwen
- Shen Honghai
- Xiu Jihong
- Song Yueming
- Jia Jiqiang
- Dai Ming
- Zhang Xin
- Zhu Ming
- Tian Dapeng
- Xu Yongsen
- Zhai Linpei
- Wang Dejiang
- Huang Meng
- Xiong Jingwu
- Shi Lei



研制的载荷参加抗战70周年阅兵
Imaging system participated in the 70th anniversary of the Anti-Japanese War parade



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三亚港口航拍图像
Aerial images of Sanya harbour



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Aerial images of Sanya harbour



研究集体合影
Study collective photo

“先进航空光电成像与测量技术”研究集体

推荐单位：中国科学院长春光学精密机械与物理研究所

研究集体主要科技贡献：

该研究集体从上世纪80年代末开始在国内率先开展了航空光电成像机理、方法与集成制造技术研究工作，突破了高性能航空光电成像与测量系统制造的技术瓶颈并进行了广泛应用，形成了一流的研究队伍，建成了先进的研究平台。基于关键技术创新，将航空光电系统的光机制造水平、环境适应能力、图像处理能力、视轴稳定能力等提升至国际一流水平，部分性能达到国际领先水平。形成了从近程、中程到远程，从低速、高速到超声速，从低空、高空到临近空间的航空光电成像与测量系统解决方案。所取得的成果满足了全空域、全时域情报支持的强烈需求，实现了航空光电成像与测量技术的跨越式发展，为我国重要航空光电装备“从无到有”、“从有到全”、“从全到优”的体系化建设作出了突出贡献。

研究集体突出贡献者



贾平 Jia Ping

贾平 中国科学院长春光学精密机械与物理研究所
主要科技贡献：进行了航空光电成像装备体系研制布局，提出并攻克了多框架干扰隔离惯性稳定、远距离复杂背景目标跟踪控制等技术。



丁亚林 Ding Yalin

丁亚林 中国科学院长春光学精密机械与物理研究所
主要科技贡献：提出并完成了大口径透镜及反射镜无应力支撑、复合多层次热控制策略、弱耦合阻尼减振方法、子孔径自准直检焦方法等技术。



张保 Zhang Bao

张保 中国科学院长春光学精密机械与物理研究所
主要科技贡献：提出了机载光电成像视轴稳定技术、机载激光照射与红外辐射测量技术、机载电视/激光光电火控瞄准技术、长焦距多光谱共口径成像等关键技术。

研究集体主要完成者

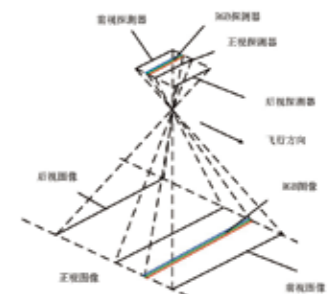
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戴明 张新 朱明 田大鹏 许永森 翟林培 王德江
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获奖证书
Award certificate



机载大视场立体航摄系统
Airborne large field stereo aerial photography system



机载大视场立体航摄系统成像原理
Imaging principle of airborne large field stereo aerial photography system