

J123(A82)

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Proposal Abstract J123(A82)

1. **Arms Control Problem:**  
Nuclear weapons - proliferation
2. **Verification Type:**  
Remote sensors - satellite
3. **Source:**  
Santhanam, K. "Use of Satellites in Crisis Monitoring". In Outer Space: A New Dimension of the Arms Race, pp. 265-274. Edited by Bhupendra Jasani. London: Taylor and Francis, 1982.
4. **Summary:**

This article examines the capabilities and effectiveness of military reconnaissance satellites. Space reconnaissance, the author maintains, can be viewed as an extension of aerial reconnaissance. Advances in launcher technology and payload stabilization systems have developed satellite reconnaissance to the point that photographs taken from space are as good as those taken from aircraft. Satellite photography is reportedly capable of ground resolution in the range 1 to 3 metres for area surveillance and of 0.3 metres for close-look satellites. This capability can yield information on 'functionally related observable differences' (FRODs) and 'externally observable design features' (EODFs) used in strategic arms limitation agreements such as SALT II (abstract J79(T79)). Area surveillance can provide precise or near-precise identification of most military targets and close-look imagery can permit target description and analysis.

Both space and aerial reconnaissance are limited in their ability to provide night-time coverage and to detect camouflage and deception techniques at a target site. However, infra-red coverage, radar imaging at lower resolutions and camouflage detection using the difference in spectral reflectance characteristics of foliage and paint can alleviate these problems somewhat. Satellites are also unable to determine military intent associated with military exercises so collecting other intelligence information is necessary before judgments can be made.

Neither the US nor the USSR has acknowledged the use of satellites for monitoring crises. It is assumed, however, that both countries have monitored all international crises in an effort to test and improve their image acquisition and interpretation systems. Soviet satellites may have covered the Sino-Soviet border conflict in 1969, the Indo-Pakistani crisis of 1971, the Arab-Israeli war in October 1973 and the subsequent ceasefire. Analysts have drawn inferences about crisis monitoring from ground track calculations based on published data from satellite tracking networks.