


# DAILY ASSESSMENT FORMAT

<b>Date:</b>	29 <sup>th</sup> June 2020	<b>Name:</b>	Soundarya NA
<b>Course:</b>	IIRS Outreach Program on Satellite Photogeommetry	<b>USN:</b>	4AL16EC077
<b>Topic:</b>	IIRS Outreach Program on Satellite Photogeommetry	<b>Semester &amp; Section:</b>	8 <sup>th</sup> - B

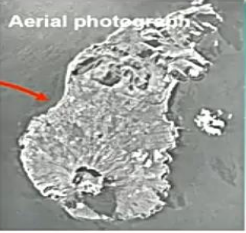
## FORENOON SESSION DETAILS

### Image of session

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**Topographic map**



**Aerial photograph**

**Map:** It shows an area as seen vertically from above. Different symbols and colours are used to represent various objects on a map.


**Aerial Photo:** They are taken from an aircraft to show objects on the ground. They can be divided into vertical aerial photos and oblique aerial photos.

Map	Aerial Photo
Orthogonal projection	Central projection
Uniform scale	Variable scale
Terrain relief without distortion	Relief displacement
All objects represented on a particular scale	Only objects that are visible
Abstract representation	Real representation
Representation geometrically correct	Distortions in geometry


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### Types of aerial photograph


Vertical




Low oblique



High oblique





Vertical
Low Oblique
High Oblique

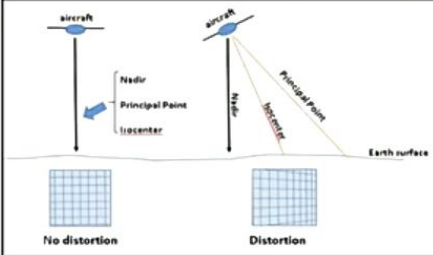







Image Acquisition

  
 Vertical

  
 Oblique

  
 Shadow

**Report:**

Historical perspective, Metric camera, Aerial photography; Statement of fundamental problem of Photogrammetry in state space formulation, Relation between Image and Object spaces; Space based platforms for Earth/Planetary observations, their classification; Satellite Orbits, their classification, formulation of orbital constraint, Space based imaging and ranging sensors, their geometric modeling; Platform attitude, platform stability, modeling of platform attitude with time; Formulation of observation equation for orbit constrained imaging.

Stereo Photogrammetry from Space, Single orbit multiple devices, Multiple Orbit- Single device, Single device-single orbit-multiple imagings, Formulation of stereo observation equations for these cases with examples; Bundle adjustment; Practical uses of Satellite Photogrammetry; Characterization of sources of error based on measurements on images; Characterization of platform stability from image measurements; Approximations of Photogrammetric model by Rational Polynomial Coefficients; Specific case studies based on Indian Earth and planetary observation satellites Cartosat 1, Chandrayaan 1; Digital Elevation Model of Earth/Planetary topography from Space based observations like Cartosat-1, ASTER, SRTM, Chandrayaan-1; its characteristics and limitations; Orthorectification of Space Imagery

**Aerial Photography:**

Aerial photography, technique of photographing the Earth's surface or features of its atmosphere or hydrosphere with cameras mounted on aircraft, rockets, or Earth-orbiting satellites and other spacecraft.

For the mapping of terrestrial features, aerial photographs usually are taken in overlapping series from an aircraft following a systematic flight pattern at a fixed altitude. Each photograph depicts an area that includes several control points, the locations of which are determined by ground-surveying techniques. A technique known as photogrammetry (q.v.), which involves the simultaneous projection of the overlapping views, makes possible the preparation of contour maps or three-dimensional models of the terrestrial surface that has been photographed. Valuable data on topography, geology, hydrology, soil and vegetation, meteorology, ocean currents, and fish resources have become accessible with the use of satellite technology and expert interpretation. Views of cloud patterns obtained from orbiting satellites are valuable in weather forecasting. Aerial photography also has vital military reconnaissance and intelligence-gathering applications.

**Uses:**

Aerial photography is one of the earliest forms of remote sensing. Even today, it is still one of the more widely used and cost-effective methods for this purpose. Before the advent of modern photographic methods, traditional photographers used in this method for remote sensing as well as for a variety of other uses.

Modern equipment has improved the quality, resolution, and platforms making this niche cheaper and more accessible than ever before. This kind of photography has a broad range of uses. Additionally, the fact that it has been used for a long time means it can provide us with a historical perspective of landscape changes through time.

One of the main uses of vertical aerial photography is for mapping. Aerial photographers use both vertical and oblique photographs for planning land-use projects, movie production, environmental studies, archaeology, power line inspection, oil and gas surveying, surveillance, commercial advertising, and even artistic projects.

You can use different types of oblique and vertical photographs are to identify water features, find ruptures in oil and gas lines, and locate archaeological features. In wartime, photographers use aerial photographs to locate targets. And, given advances in drone technology, the applications for this niche are growing.