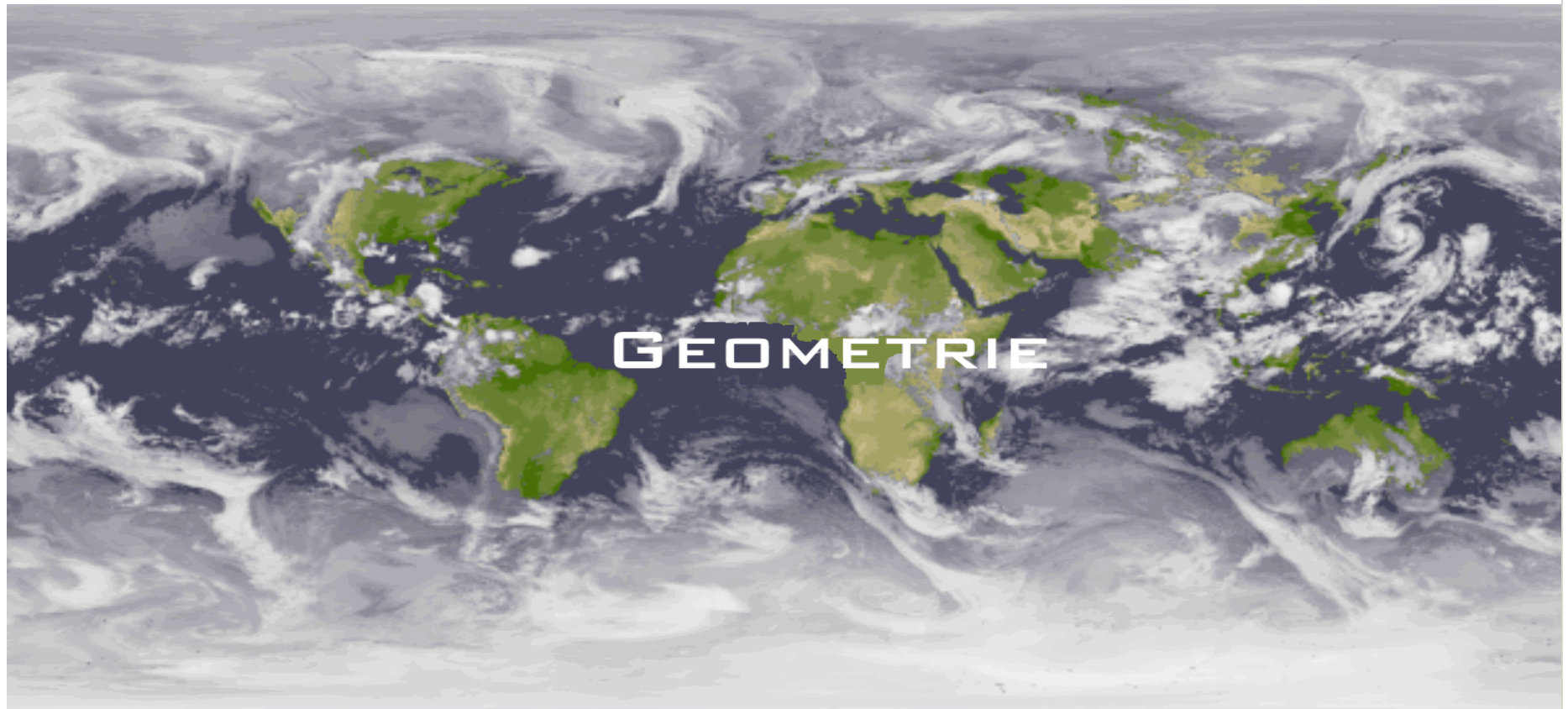
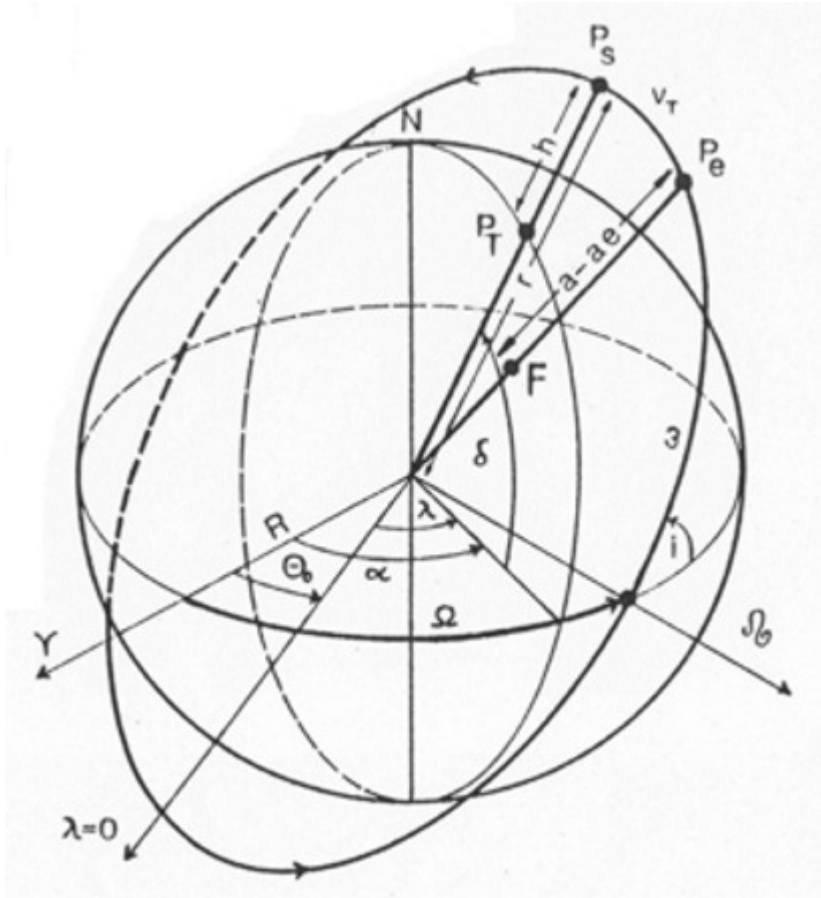


Fernerkundung **Geometrie**



Fernerkundung **Geometrie**

Einführung von Bahnparametern



Form Bahnelemente:

a = große Halbachse

b = Exzentrizität

Lage Satellit in Bahnelemente:

w = Argument

V_t = mittlere Anomalie

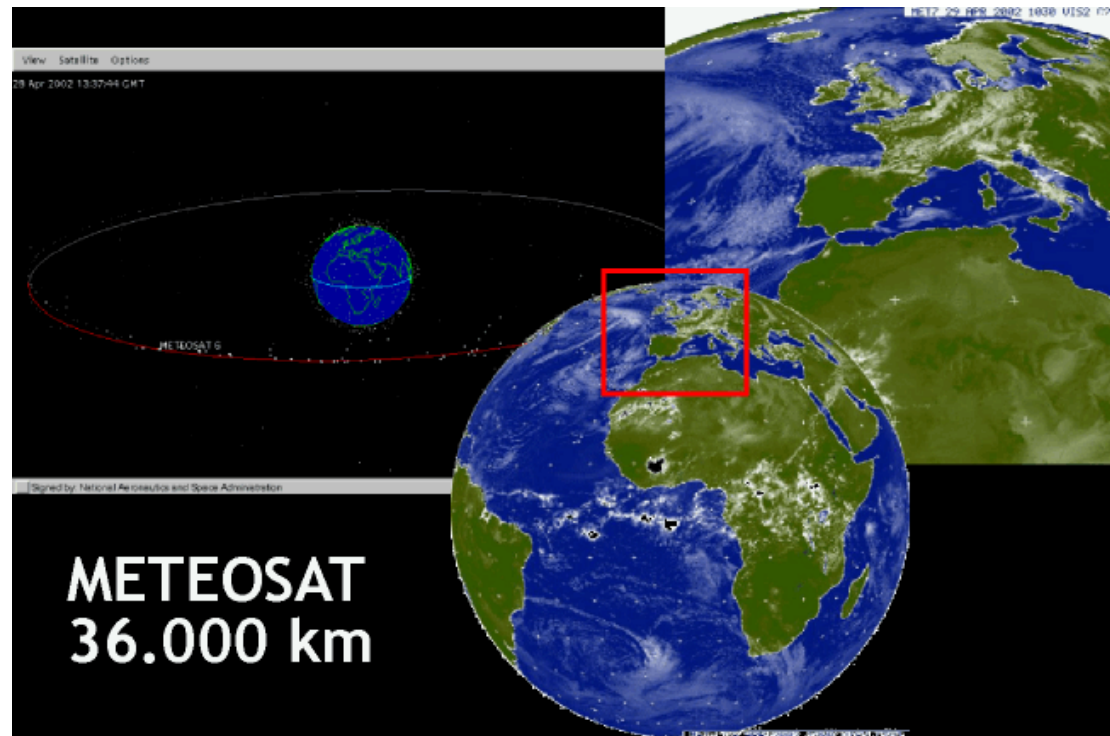
Relative Lage Bahnebene und Äquatorebene

i = Inklination

Ω = Rektaszension des aufsteigenden Knotens

Fernerkundung **Geometrie**

Satellitenbahnen (geostationärer Orbit)



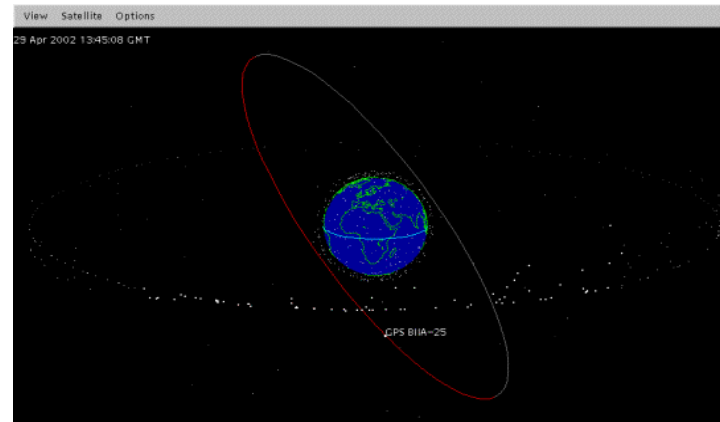
Quelle: <http://liftoff.msfc.nasa.gov/realtime/jtrack/3d/JTrack3d.html>



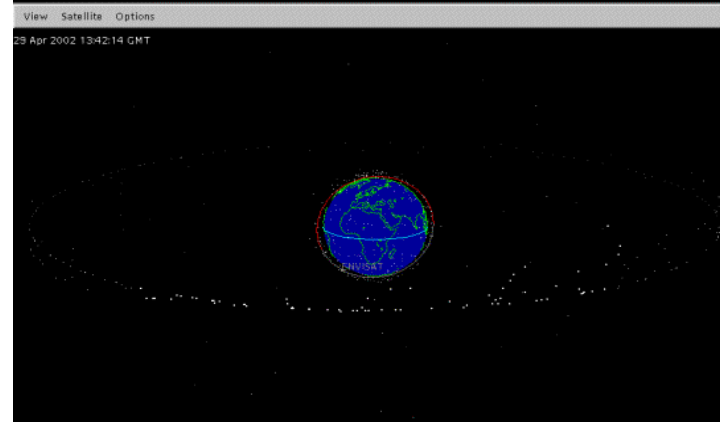
Fernerkundung **Geometrie**

Satellitenbahnen

GPS 20.000 km



ENVISAT
780 km, 35 Tage

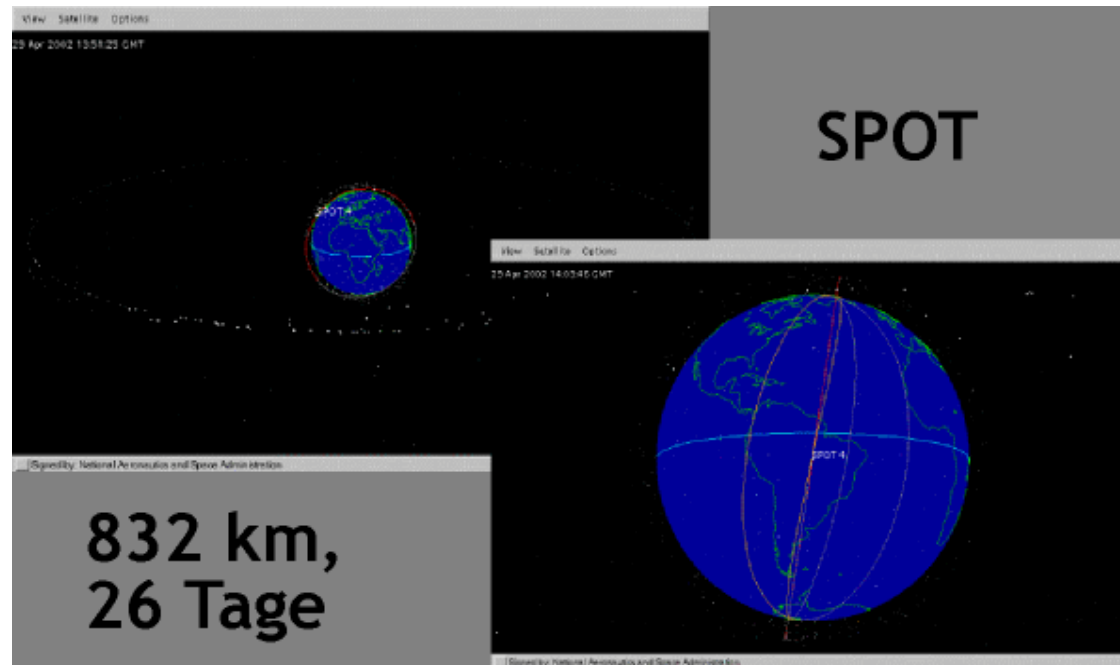


Quelle: <http://liftoff.msfc.nasa.gov/realtime/jtrack/3d/JTrack3d.html>



Fernerkundung **Geometrie**

Satellitenbahnen



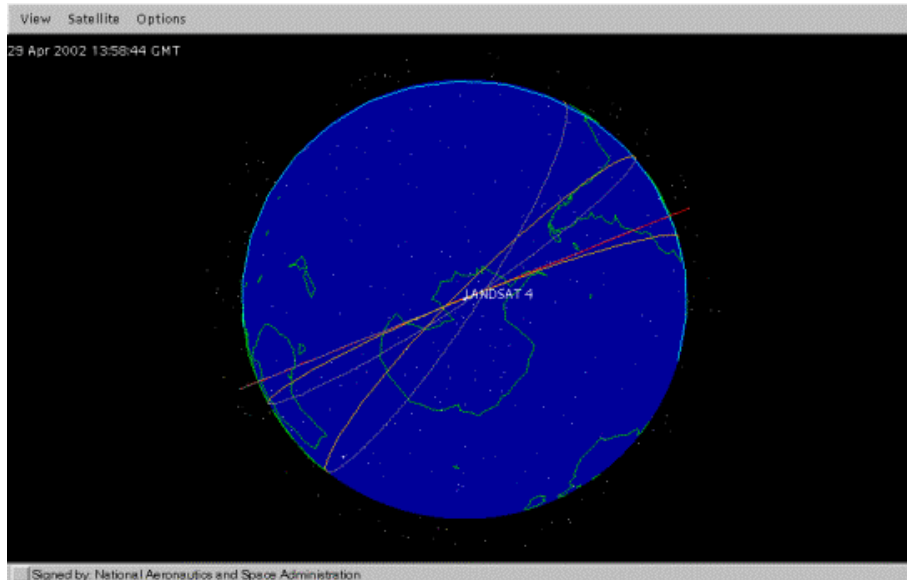
Quelle: <http://liftoff.msfc.nasa.gov/realtime/jtrack/3d/JTrack3d.html>



Fernerkundung **Geometrie**

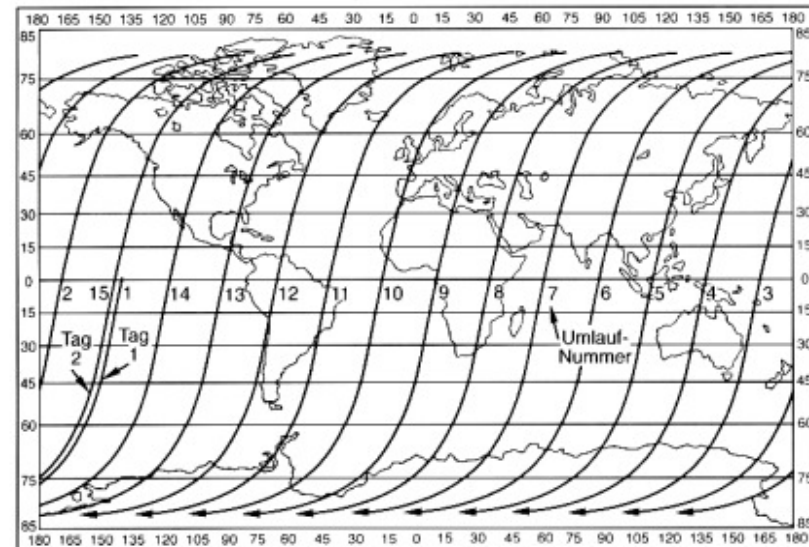
Satellitenbahnen

LANDSAT

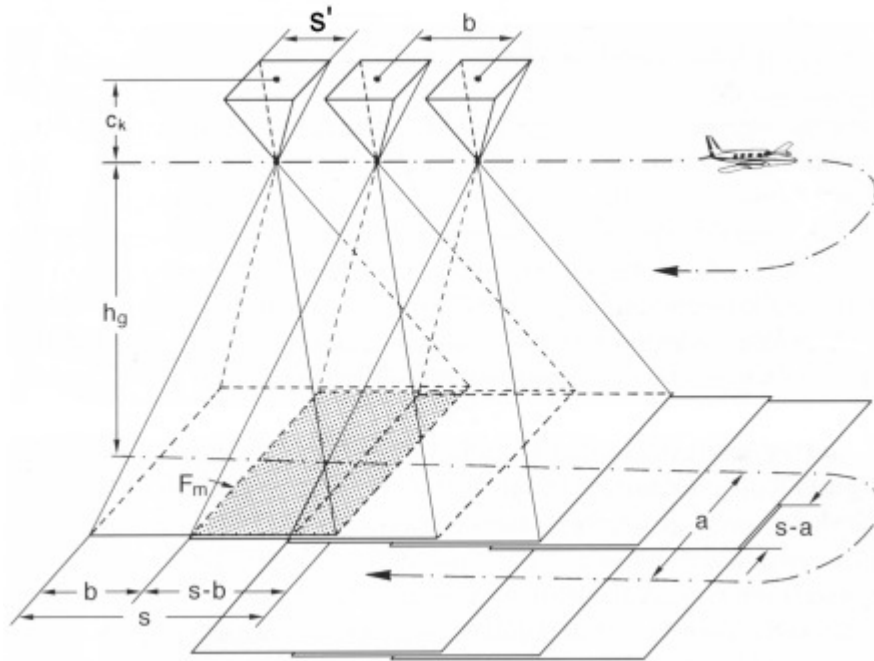


Quelle: <http://liftoff.msfc.nasa.gov/realtime/jtrack/3d/JTrack3d.html>

705 km, 16 Tage



Fernerkundung **Geometrie**



Photogrammetrischer Bildflug:

s (s') Bildseite im Gelände (im Bild)

b Basis

$s-b$ Längsüberdeckung (p %)

$s-a$ Querüberdeckung (p %)

c_k Kamerakonstante

h_g Flughöhe über Grund

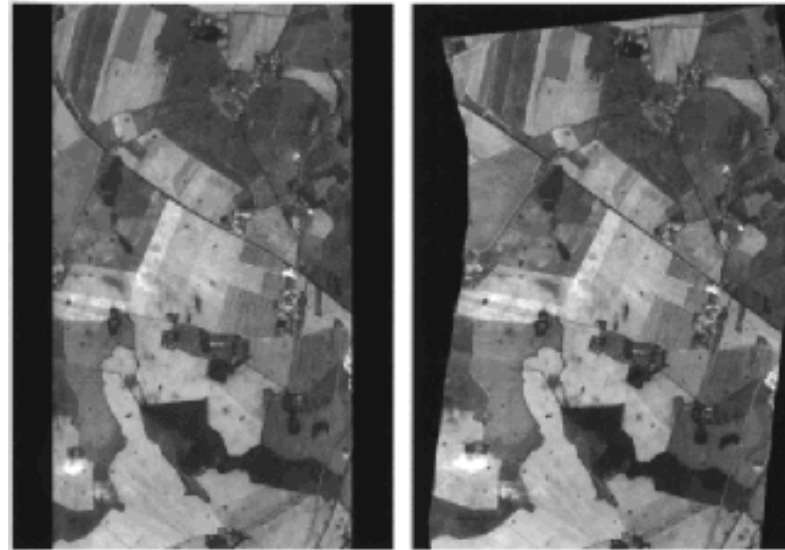
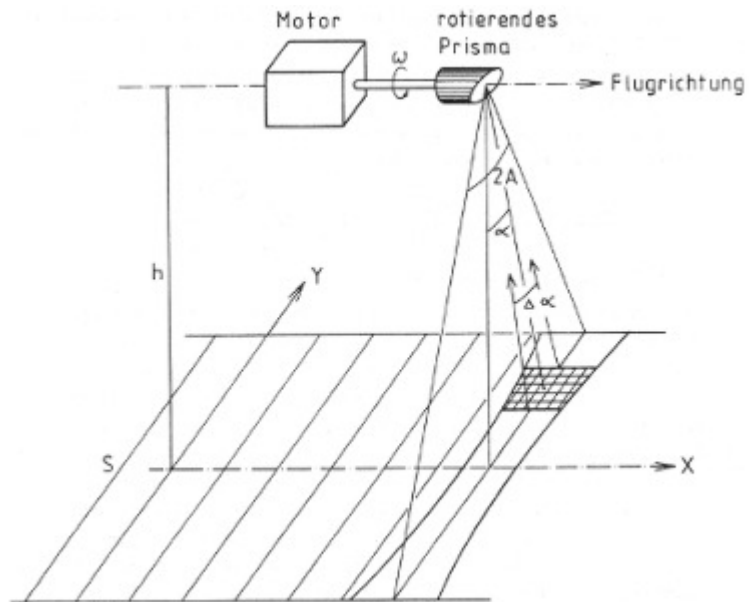
F_m Fläche des Modells

Quelle: nach Albertz (2001): Einführung in die Fernerkundung



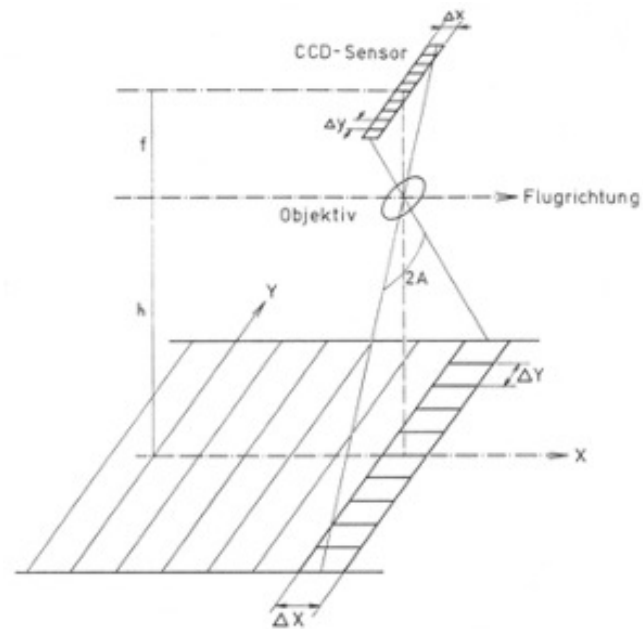
Fernerkundung **Geometrie**

Optisch-mechanischer Scanner



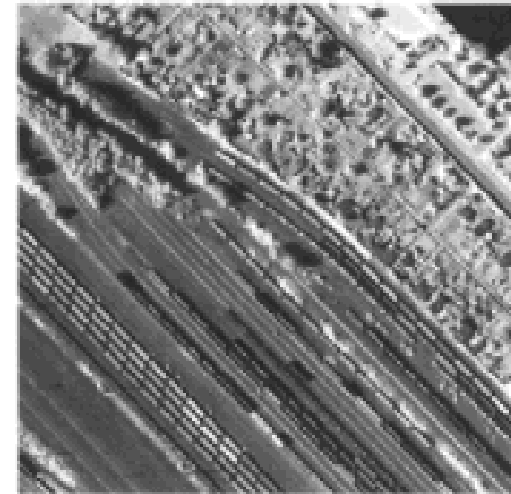
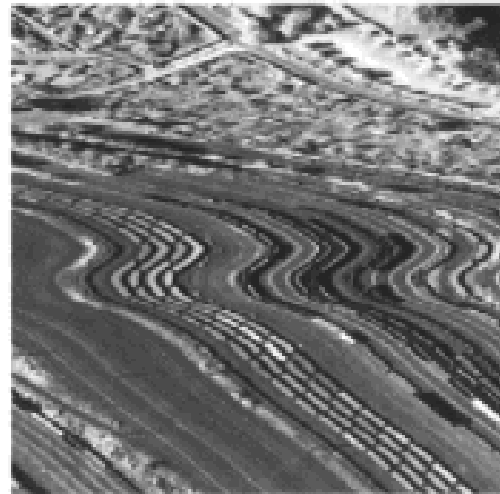
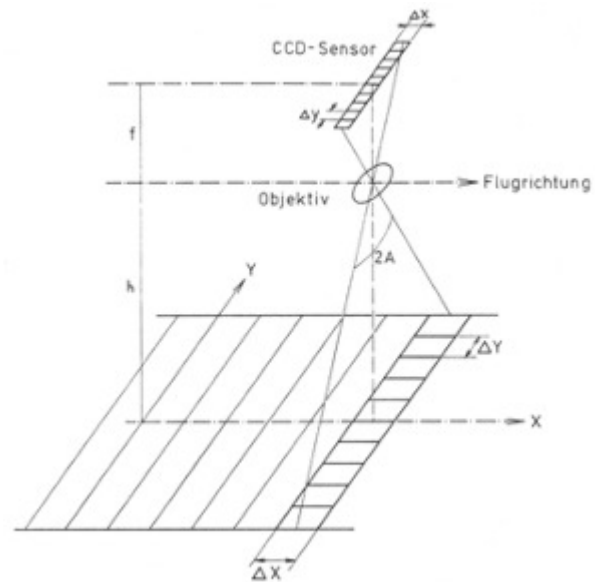
Fernerkundung **Geometrie**

Optisch-elektronische Scanner



Fernerkundung **Geometrie**

Abbildung optisch-elektronischer Scanner

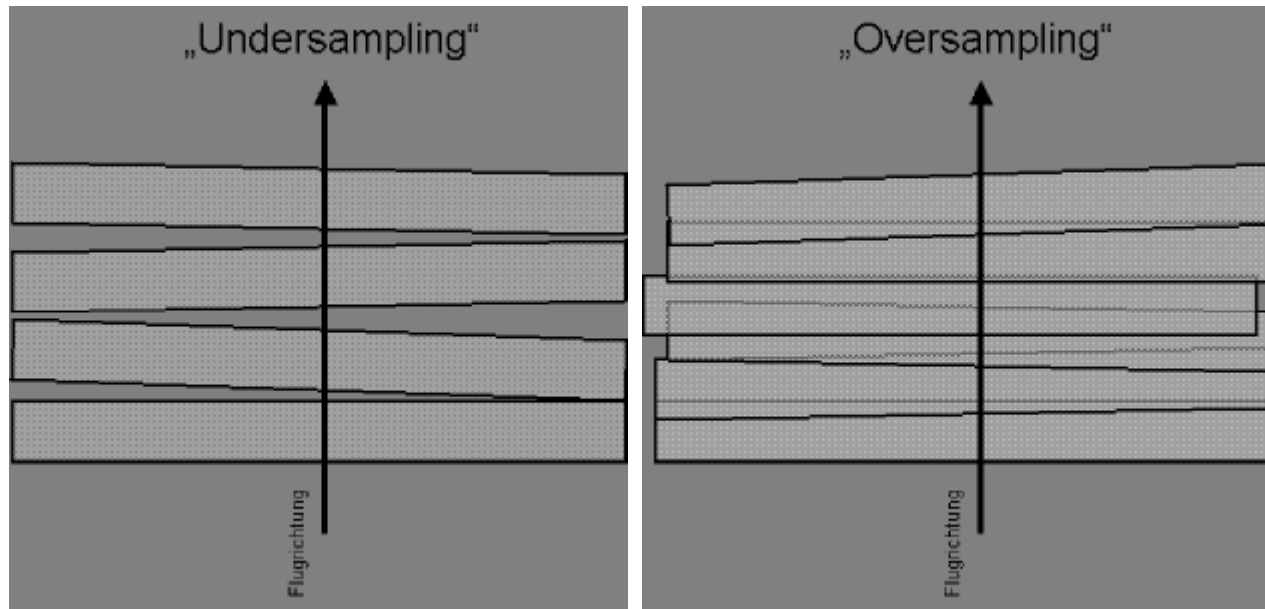


Quelle: Albertz (2001): Einführung in die Fernerkundung



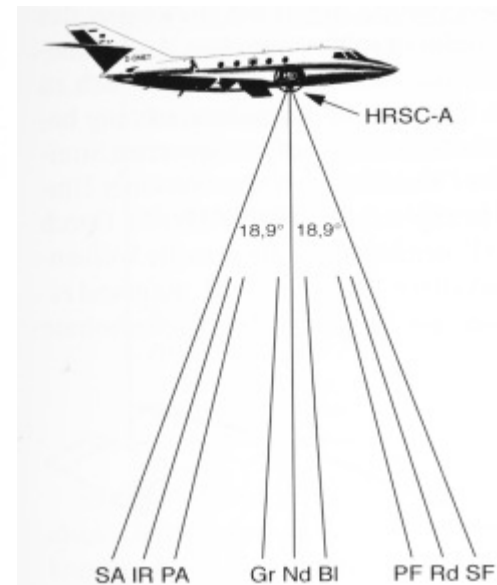
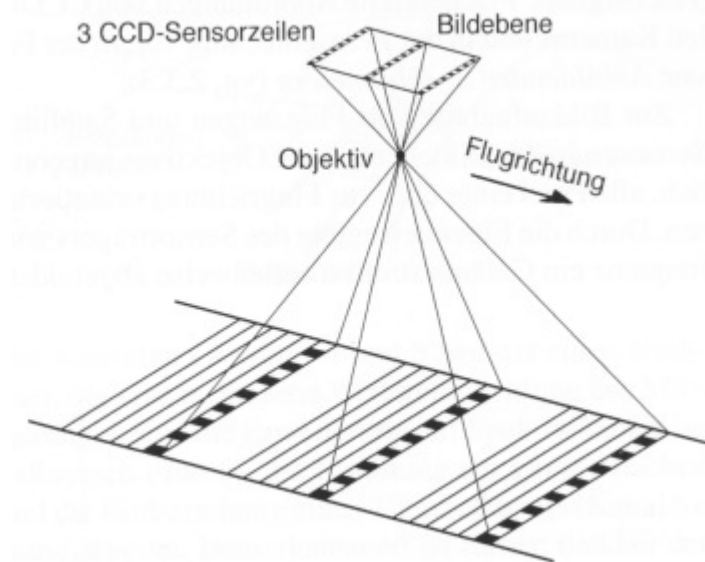
Fernerkundung **Geometrie**

Abtastung Zeilenscanner



Fernerkundung **Geometrische Aspekte**

Dreizeilen-Scanner

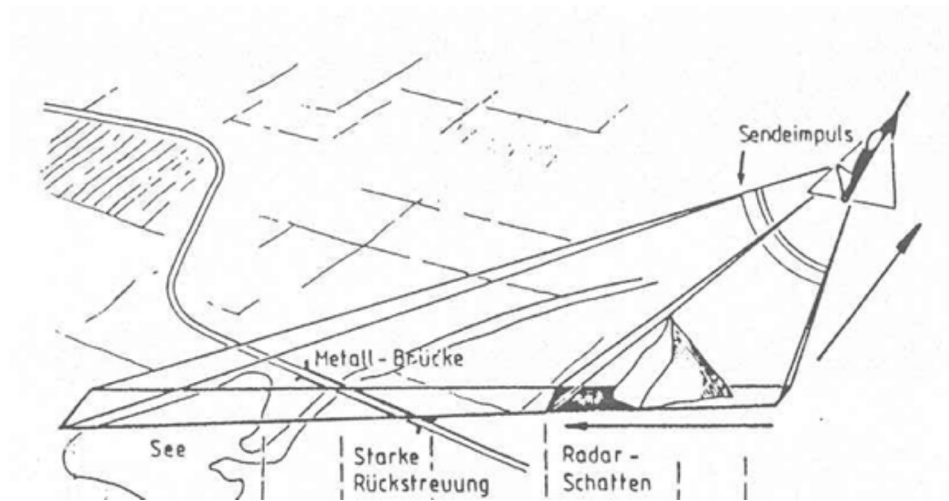


Quelle: Albertz (2001): Einführung in die Fernerkundung

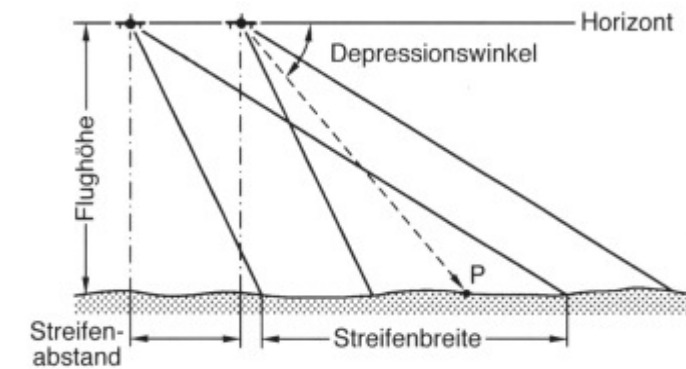


Fernerkundung **Geometrie**

Radarsysteme



Quelle: Sabins (1978): Remote Sensing, Principles and Interpretation

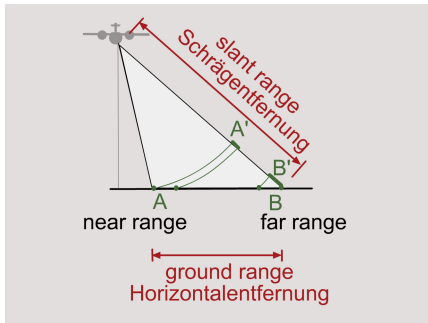


Quelle: Albertz (2001): Einführung in die Fernerkundung

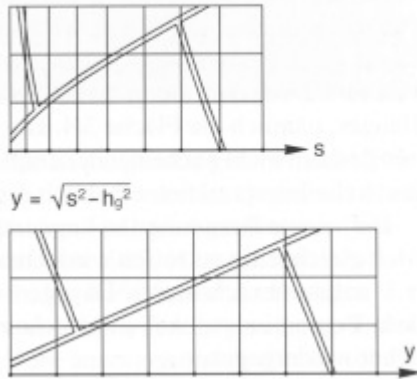


Fernerkundung **Geometrie**

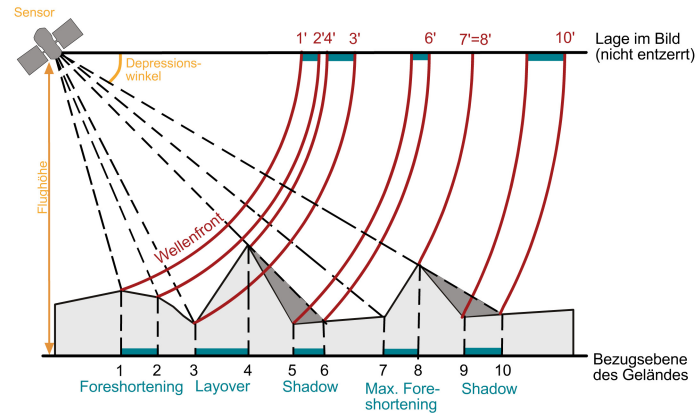
Abbildung Radarsysteme



Wiedergabe im Radarbild

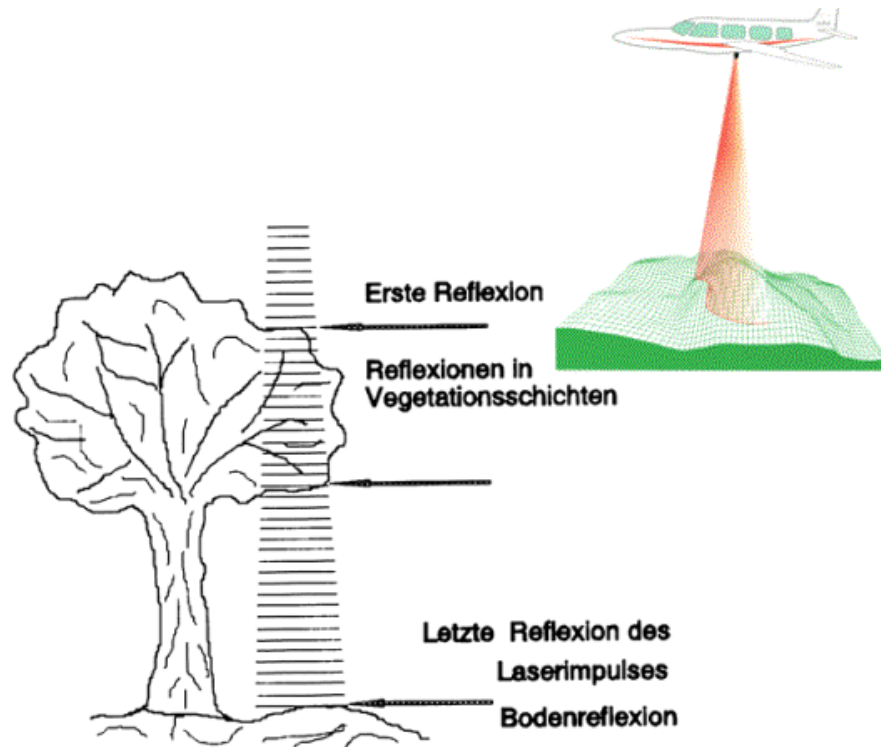


Quelle: Albertz (2001): Einführung in die Fernerkundung



Fernerkundung **Geometrie**

Laserscanner



Quelle: Lindenberger 1993



DOM

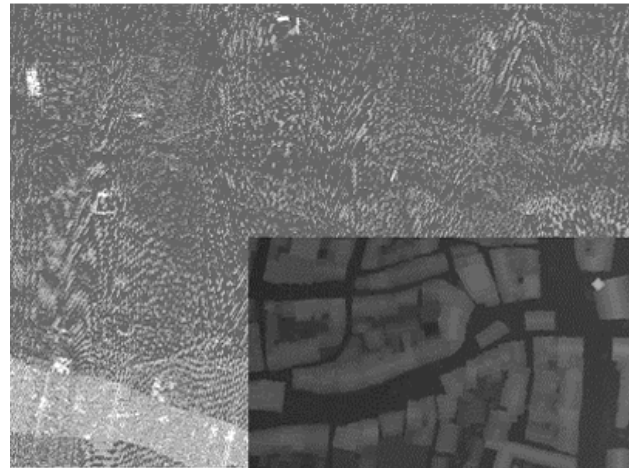
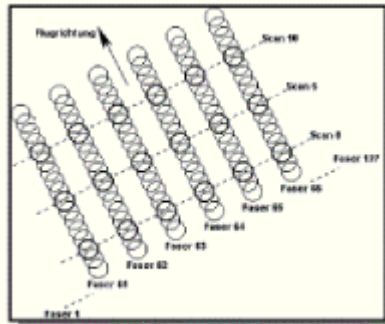
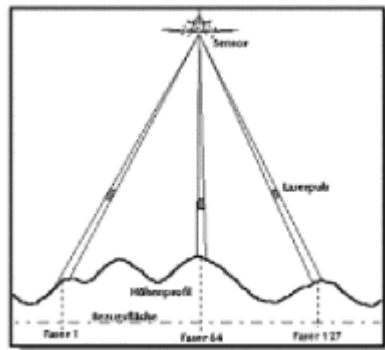


Reflexionsgrad

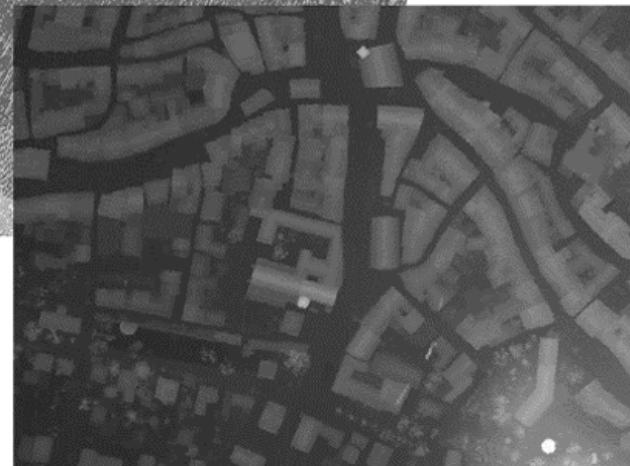
Quelle: Institut für Navigation, Stuttgart

Fernerkundung **Geometrie**

Abtastung Laserscanner am Beispiel TopoSys



Punktverteilung



DSM

Quelle: <http://www.toposys.com>



