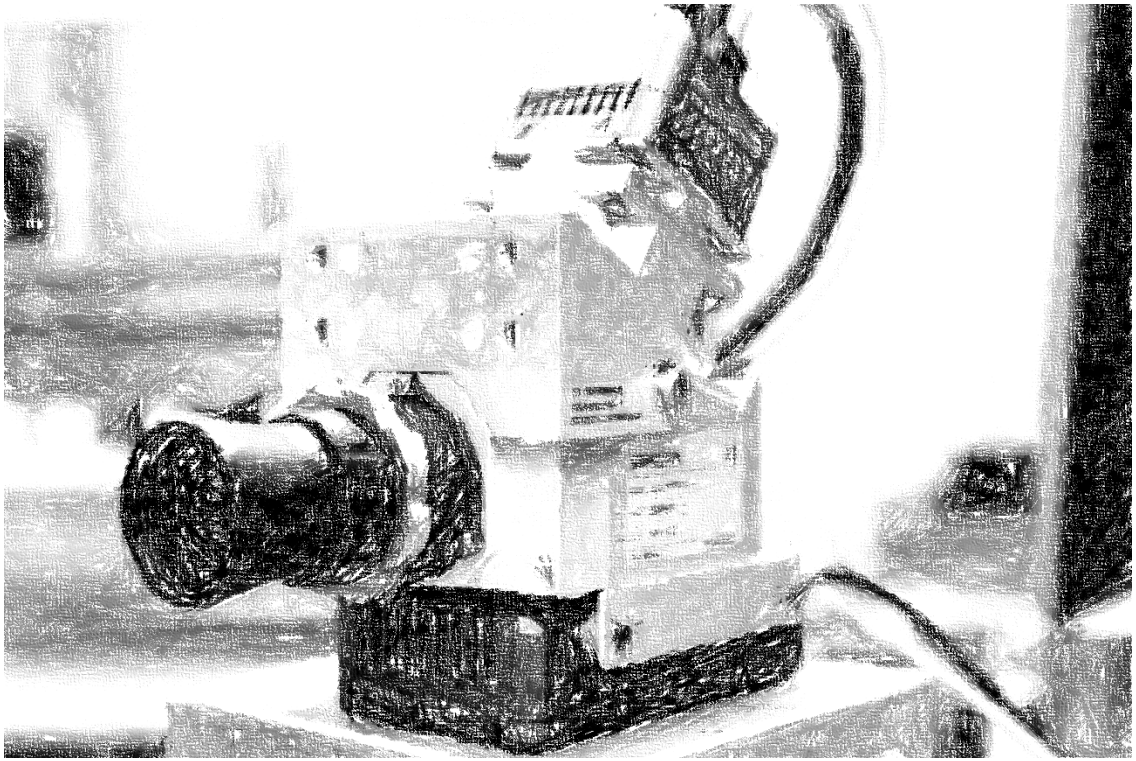
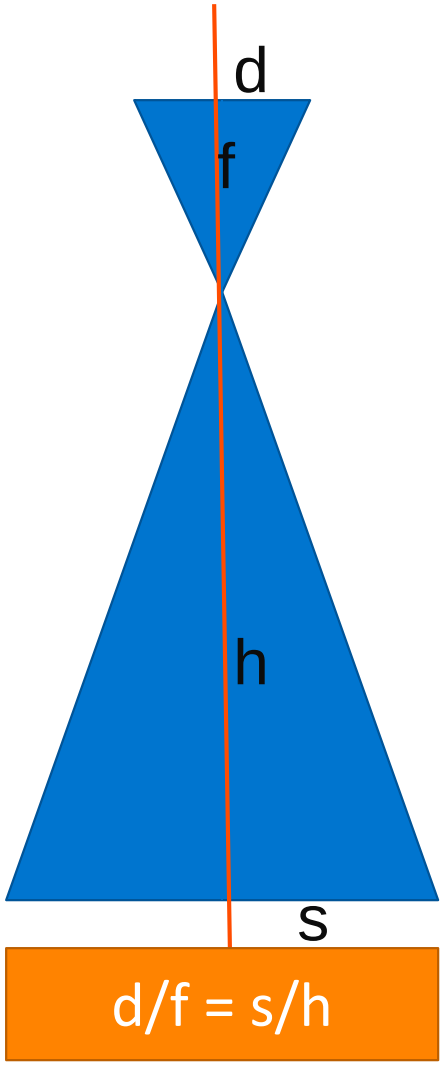


AISAKESTREL TRAINING MATERIAL
SPECIM SPECTRAL IMAGING

SIMPLE MATH FOR KESTREL



- Detector width 2d, Focal length f
- Height h, Swath width 2s
- For Ibis
  - 2d = 1024 x 24 um = 24.576 mm
  - f = 35.445 mm
  - FOV = 2* atan (d/f) =~ 38.2 vs. 40.2 measured
  - Swath = h*2d/f = ~ h * 0.69
  - Ground pixel = h * 0.024 / f = h * 0.00068

where 0.024 is pixel size at slit plane

Height [m] / [ft]	Swath [m] / [ft]	Ground pixel
500 / 1640	346 / 1137	0.34 / 1.1
1000 / 3280	693 / 2274	0.68 / 2.2
1500 / 4920	1040 / 3411	1.0 / 3.3

ACROSS TRACK SAMPING

- Across track sampling depends on
  - Altitude
  - Sensor field of view i.e. lens
  - Number of spatial pixels

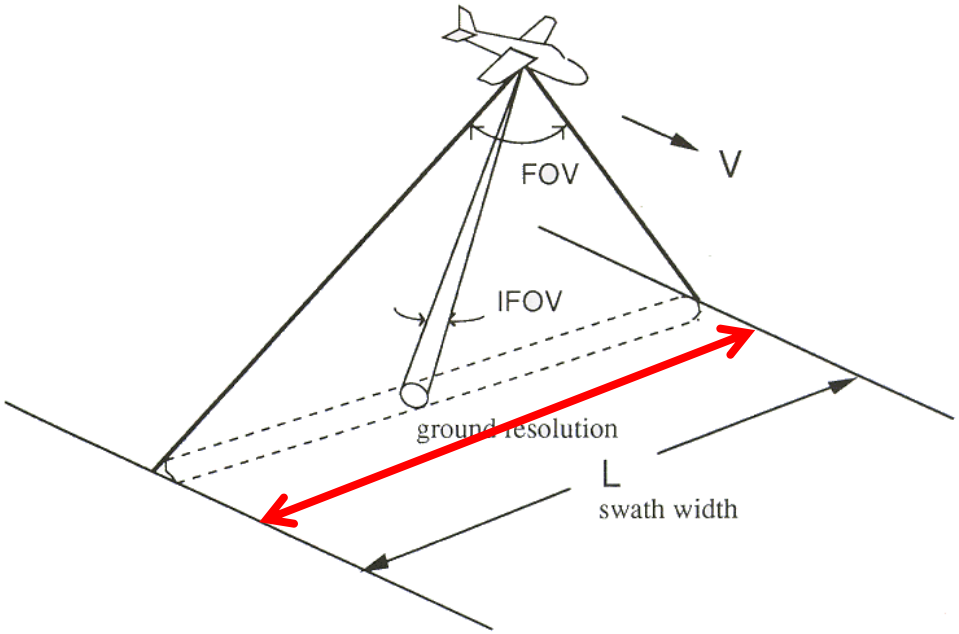


Figure 6.2.1 FOV and IFOV

ALONG TRACK SAMPLING

- Along track sampling depends on
  - Frame rate
  - Ground speed

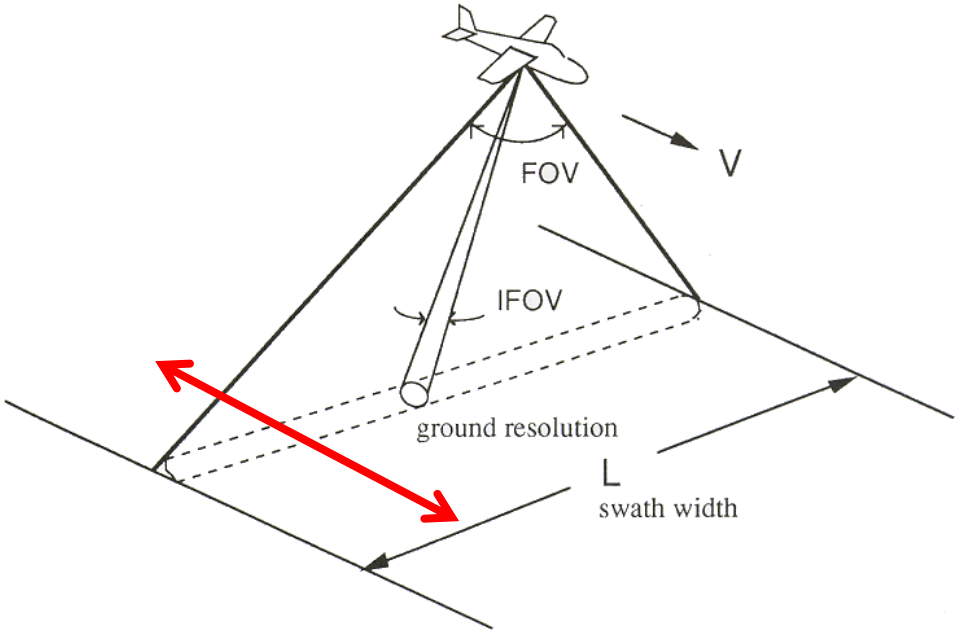


Figure 6.2.1 FOV and IFOV

SPECTRAL IMAGING