1. The first Corona launch was on February 28, 1959.
2. The first successful launch and recovery of a Corona capsule was on August 10, 1960. It was mission number 13.
3. It took 14 launches before a film was successfully returned on August 18, 1960.
4. This launch relates to the U-2 incident with Gary Powers because even though President Eisenhower had to terminate reconnaissance over the Soviet Union the Corona satellite was an alternate method of spying for the U.S. This incident accelerated the development of the Corona project.
5. The KH-4 series cameras had a film resolution of 160 lines/mm and a ground resolution of 6ft.
6. The swath width associated with the best-resolution KH-4 images was
7. There were 145 Corona Missions.
8. Rayleigh criteria: $GSD=\frac{1.22\*λ}{diameter}\*range$

$$λ=500\*10^{-9}, range=115\*10^{3},f/\#=\frac{focal length}{diameter},f/\#=f/3.5, focal length=24" =0.61m$$

$$GSD=\frac{1.22 x 500\*10^{-9}}{\frac{0.61}{3.5}}\*115\*10^{3}=40.9\*10^{-2}m=40.9cm$$

1. The three factors that constrain the resolution obtainable with an imaging system are atmospheric absorption, scattering, and turbulence.
2. The Hubble primary optic has a focal length of 57.4m, a diameter of 2.4m, and a f/# of 24
3. H
4. The energy band gap for lead sulfide is 0.35-0.40(eV) at 300 K. The cutoff wavelength, λ, for lead sulfide is:

$$λ=\frac{h\*c}{∆E}=\frac{1.24\*10^{-6}(eV m)}{0.40}=3.1\*10^{-6}m or 3.1μm$$

1. $f/\#=f/5.0$, focal length = 24”=0.61m

$$Diameter= \frac{focal length }{f/\#}=\frac{0.61}{5}=12.2\*10^{-2}m=12.2cm$$

1. $f/\#=\frac{50\*10^{-3}}{0.57\*10^{-3}}=87.7$
2. $GSD=∆x=1.22\*\frac{λ\*R}{a}, 0.66=1.22\frac{5\*10^{-7}\*384,400\*10^{3}}{a} a=355.28m$