

SIRTF



's Space InfraRed Telescope Facility



Alyssa A. Goodman

Professor of Astronomy

Harvard University

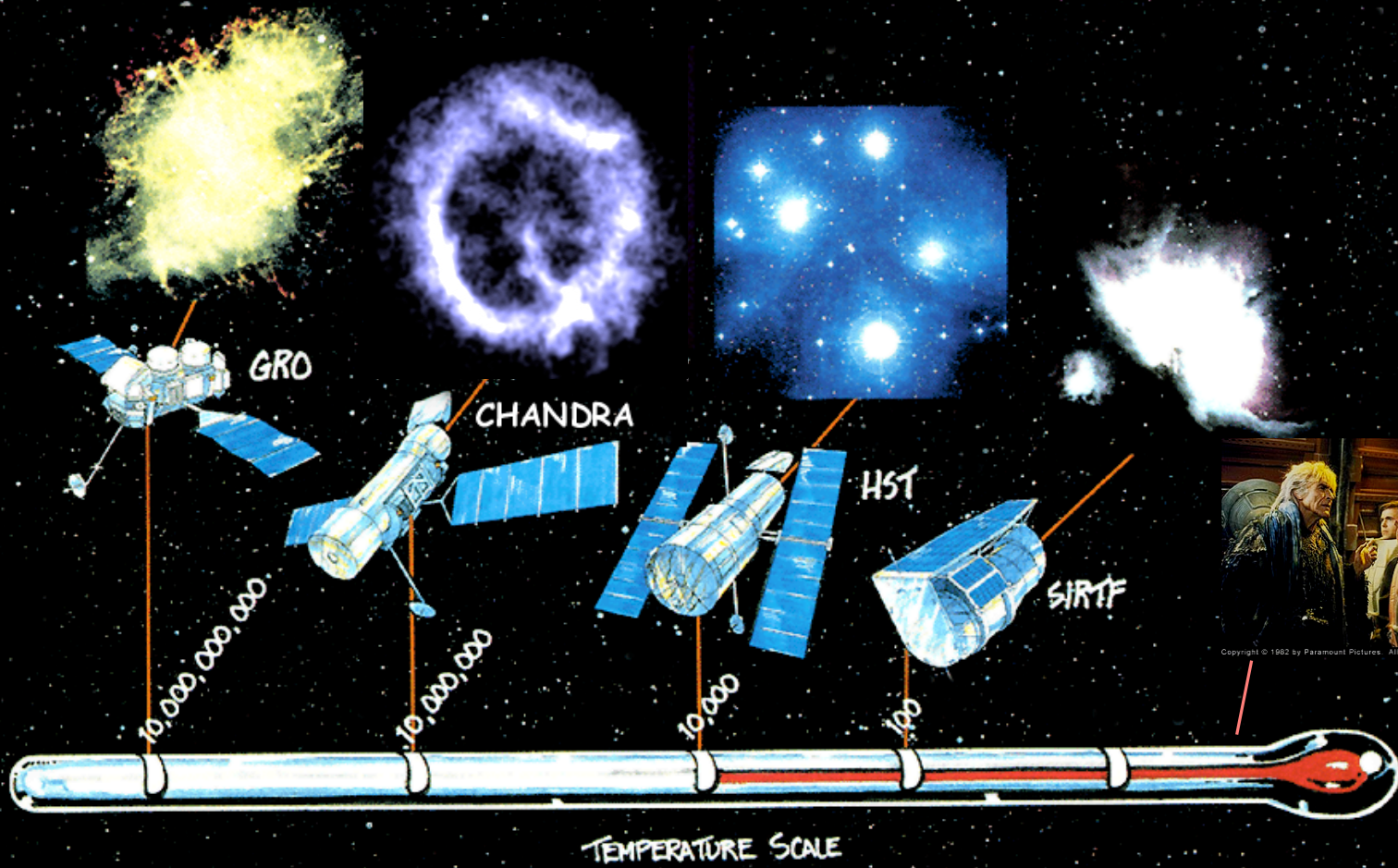
It's not always so cold in space...



Copyright © 1982 by Paramount Pictures. All Rights Reserved.

“Revenge is a dish best served cold, and it’s very cold in space.”--Khan

Observatories for Any "Temperature"



GAMMA RAYS

X-RAYS

UV

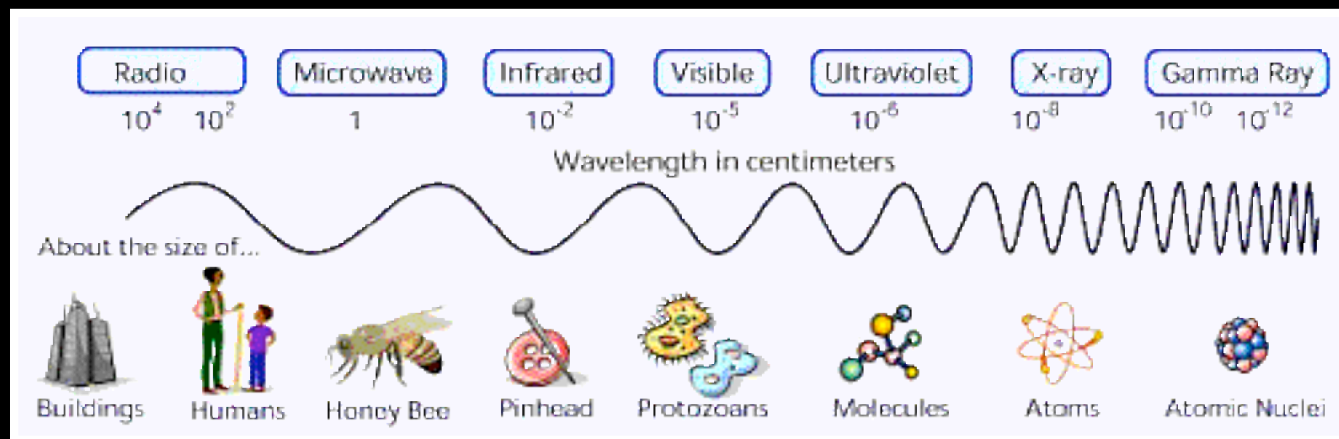
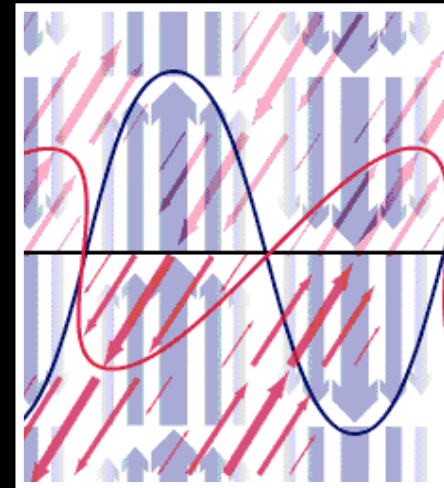
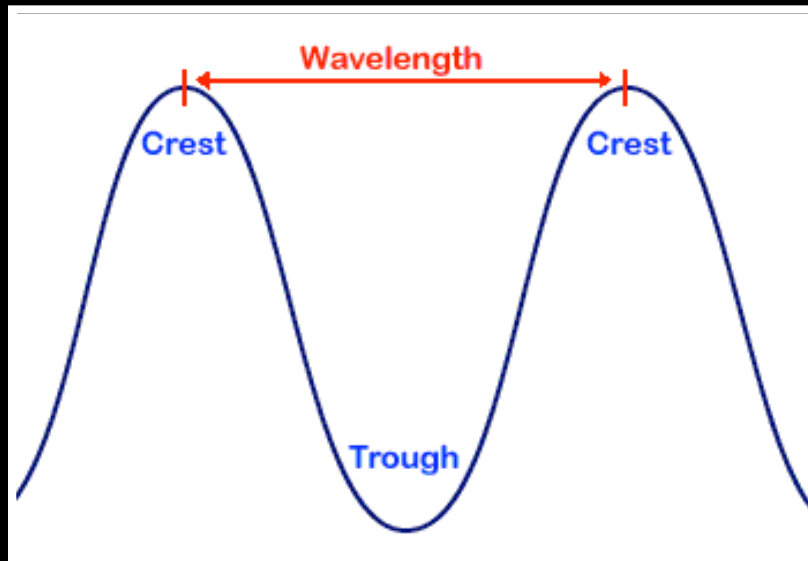
VISIBLE LIGHT

INFRARED

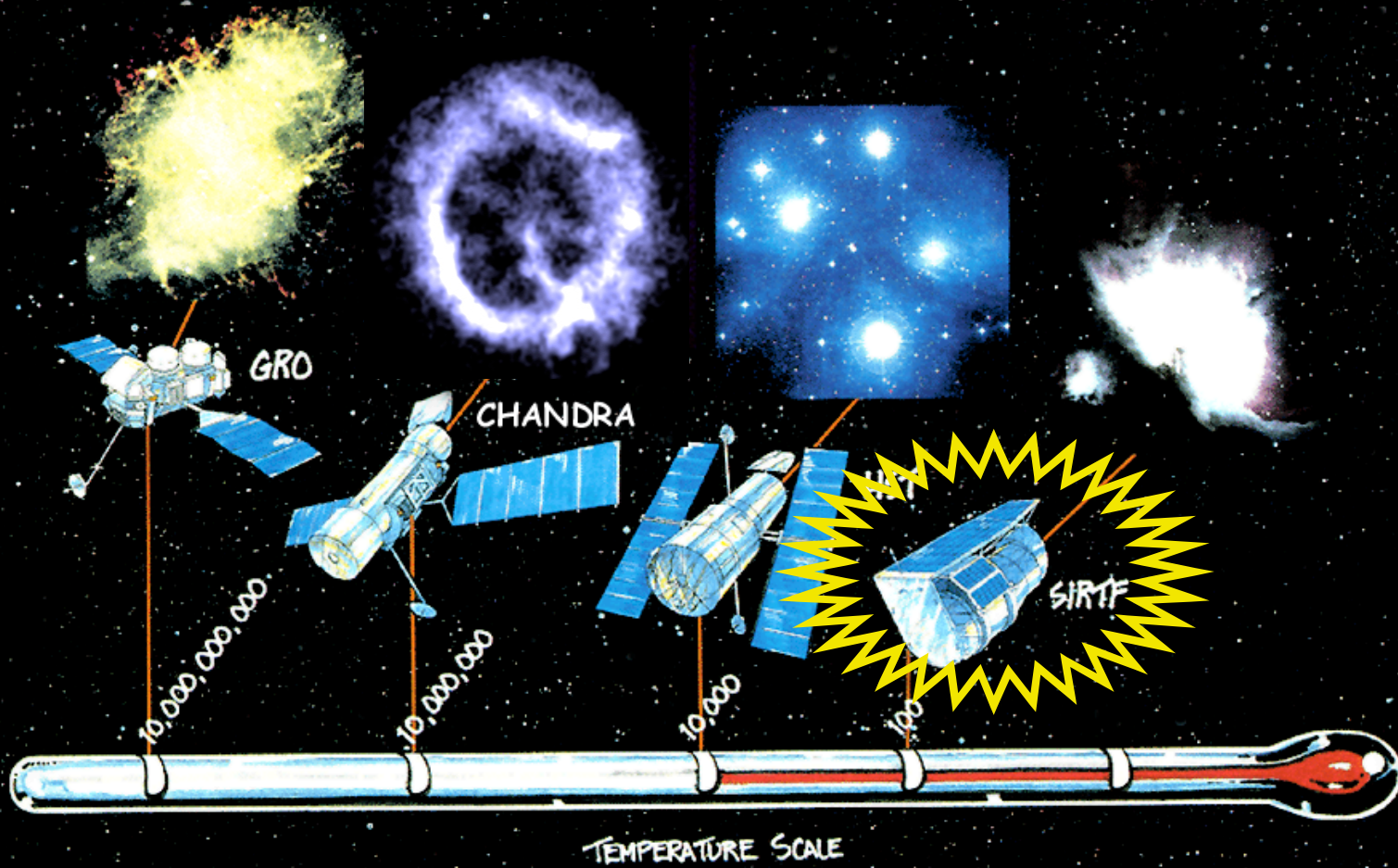
MICROWAVE

RADIO

Wavelength



NASA's Great Observatories



GAMMA RAYS

X-RAYS

UV

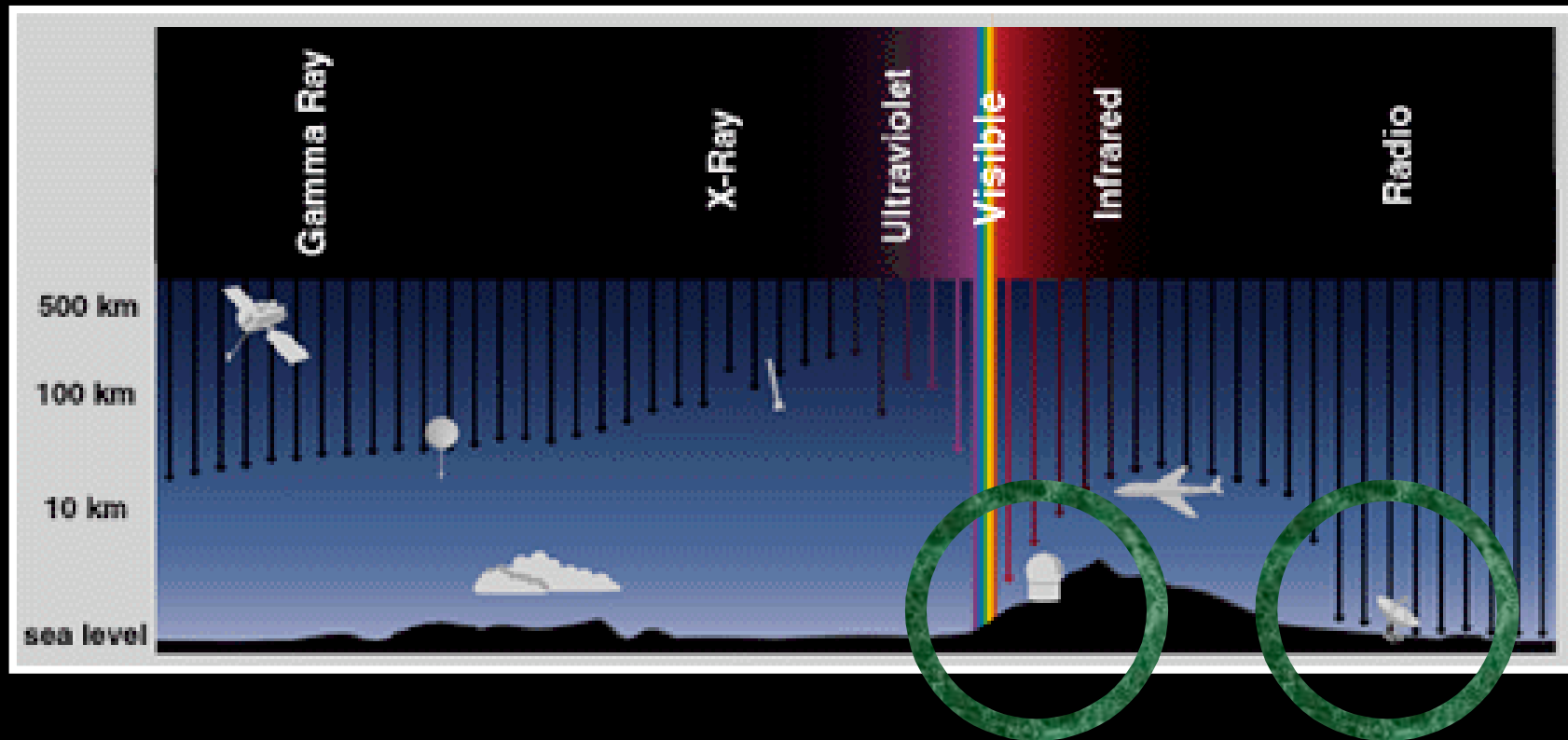
VISIBLE
LIGHT

INFRARED

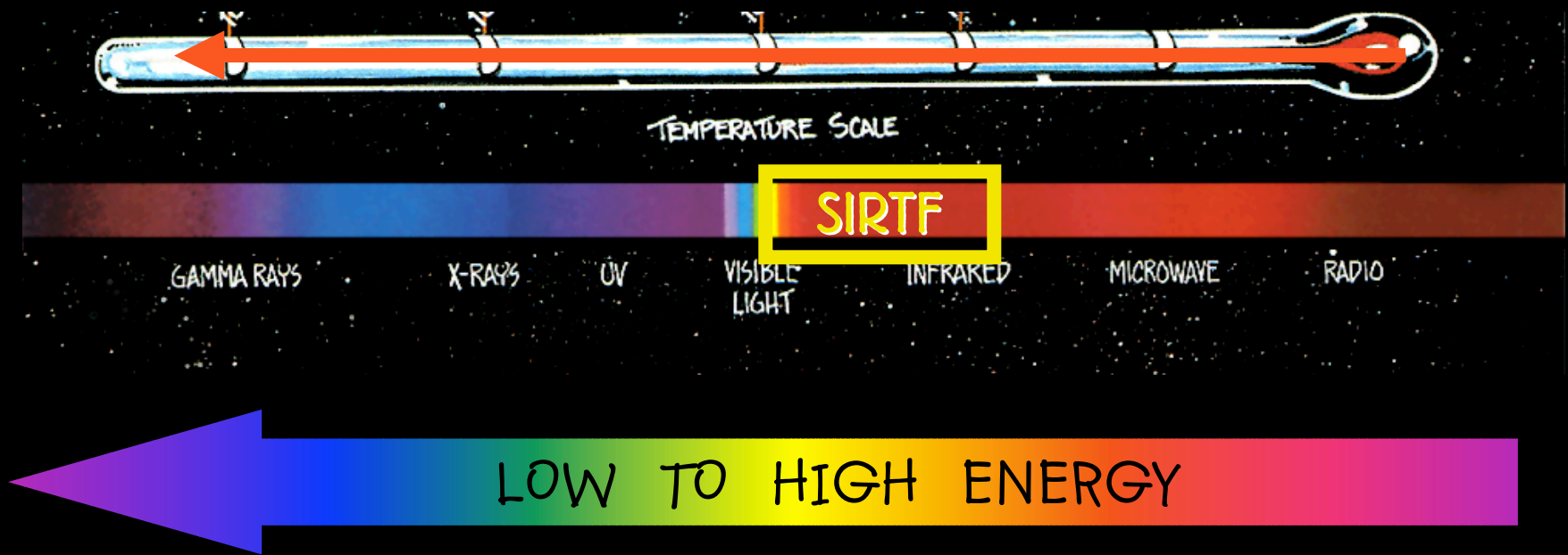
MICROWAVE

RADIO

What wavelengths are easy to observe from the ground?

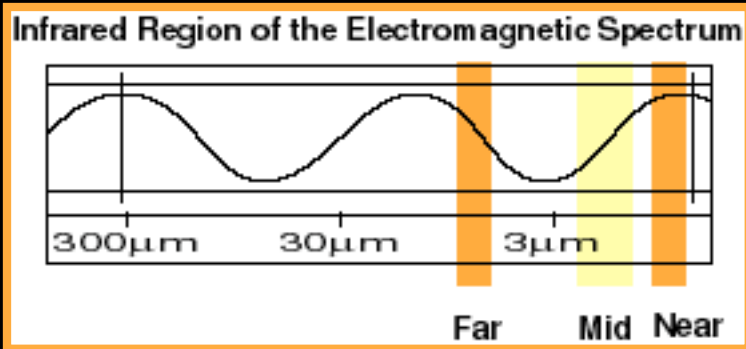
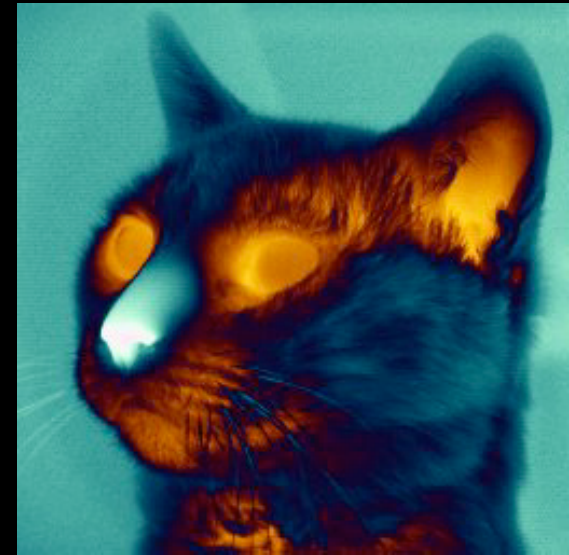


The Electromagnetic Spectrum





Infrared Life

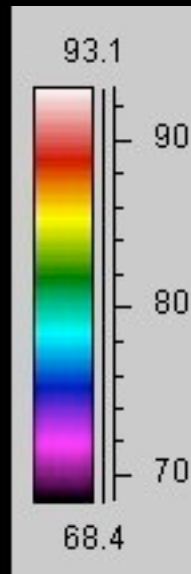


The “Thermal” (or “Far”) Infrared

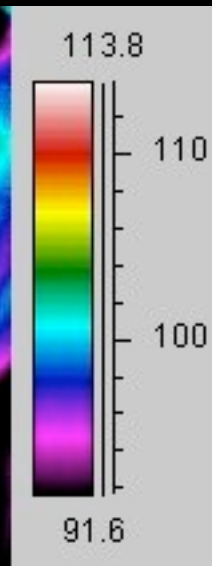
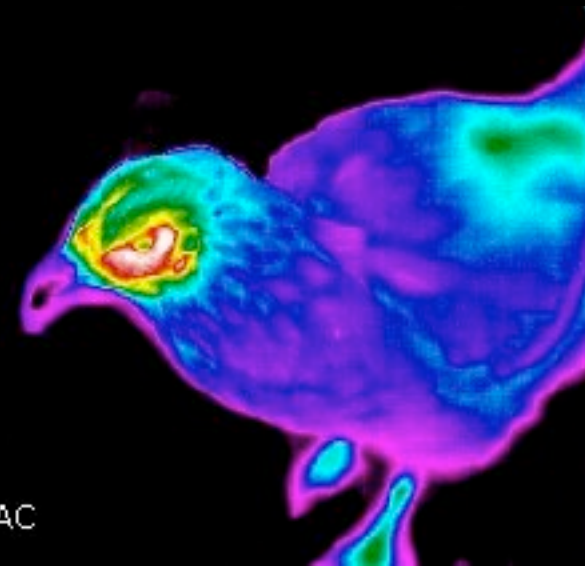
NASA/IPAC



Temperature, deg F



NASA/IPAC

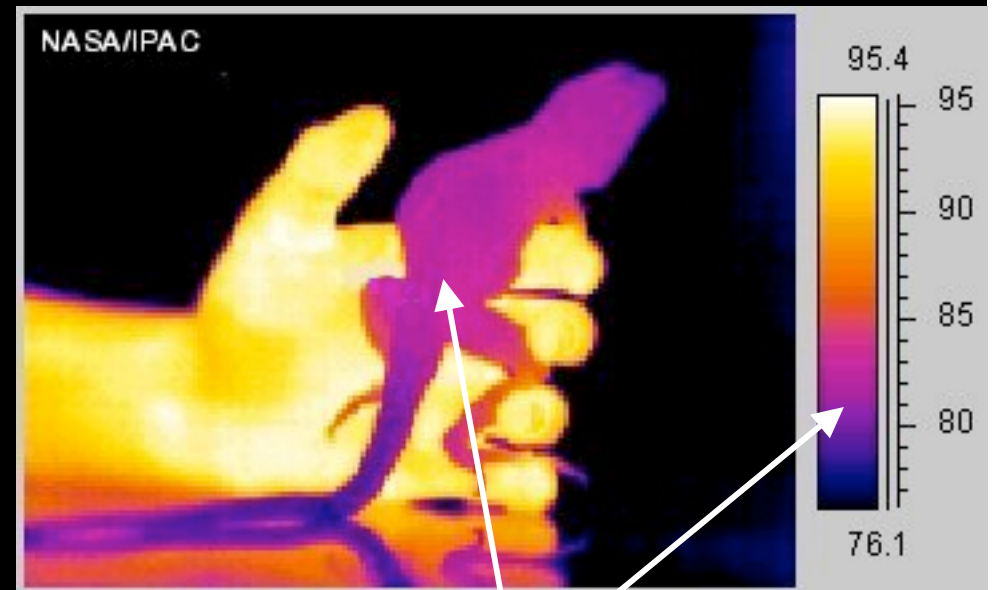


“Emission” from a Cold-blooded Lizard

Optical Image

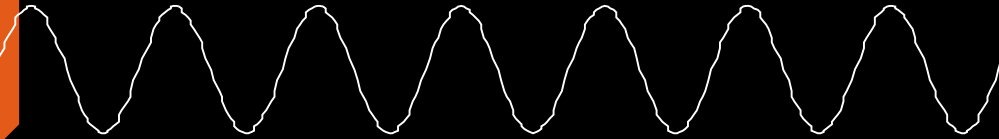


Far-Infrared Image



“Room Temperature”

Emission & Absorption

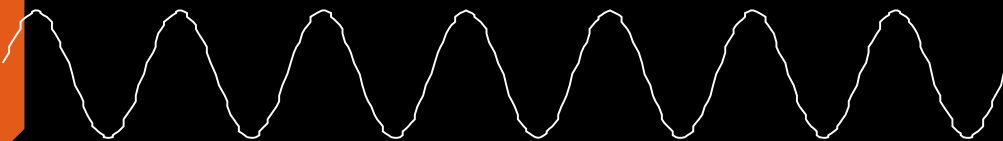
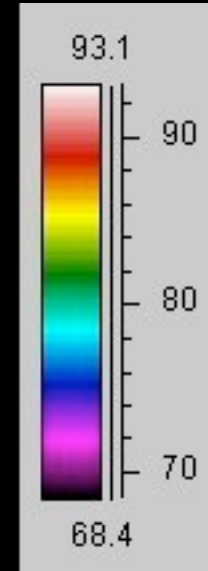


"Emission"



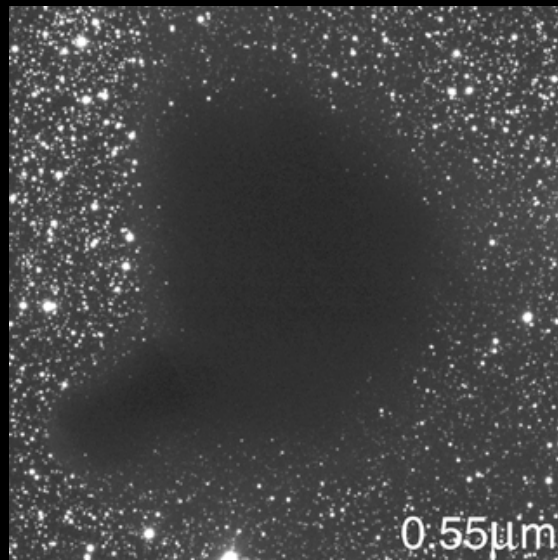
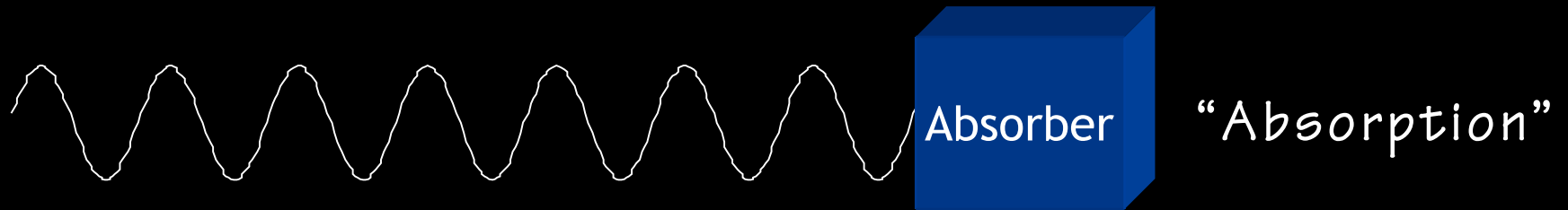
"Absorption"

Emission

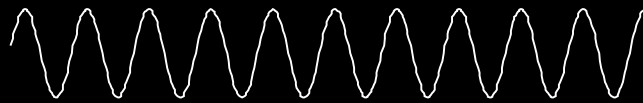


“Emission”

Absorption



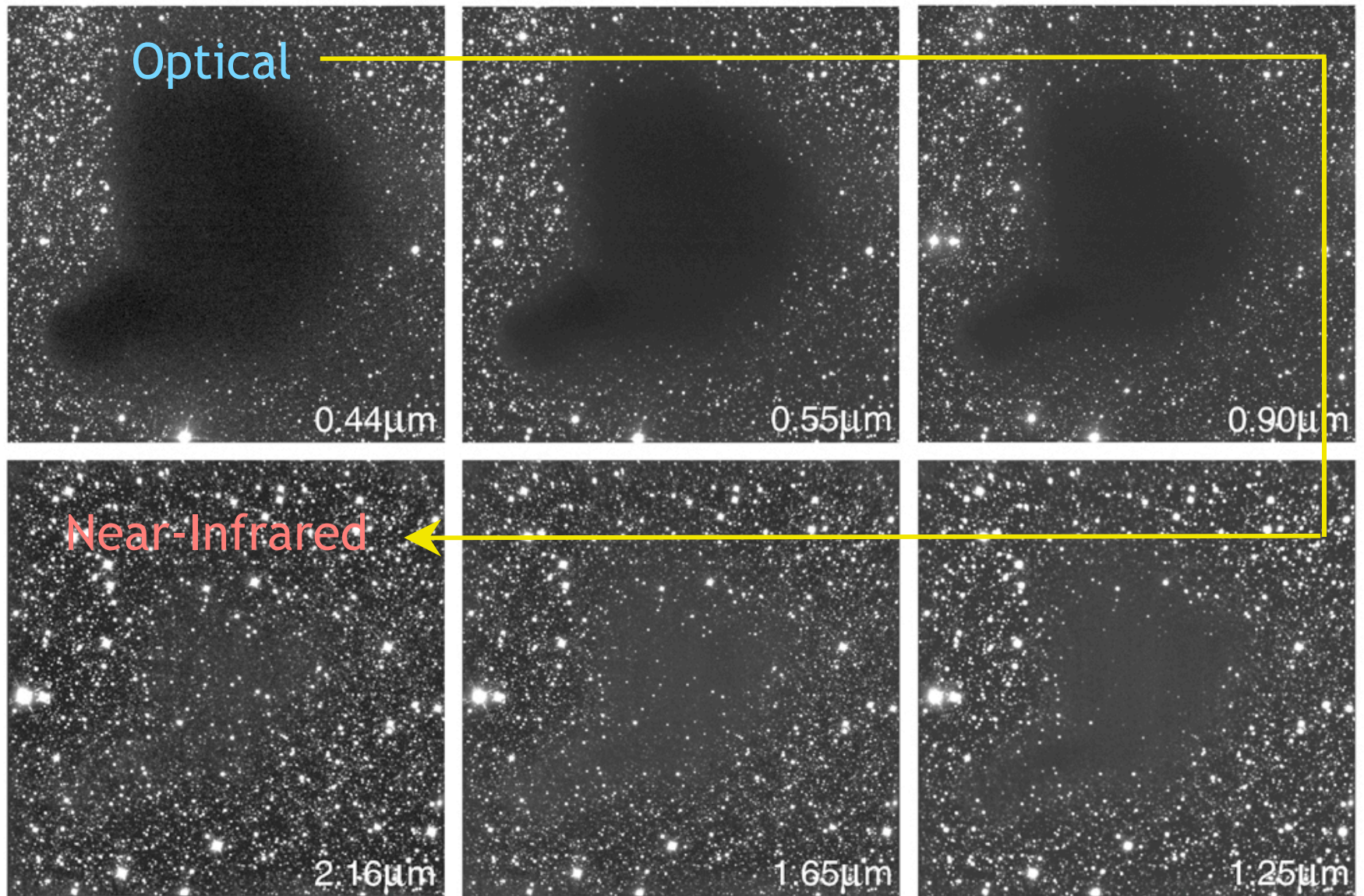
Not all Wavelengths are Absorbed Equally



Light is "Extinguished"
& Does not Reach Us



Light Goes Right by
& Reaches Us



The Dark Cloud B68 at Different Wavelengths (NTT + SOFI)

SIRTF



's Space InfraRed Telescope Facility



Launch set for April 15, 2003



"Great Observatory" for Near- and Far-Infrared Astronomy

Real Star Formation

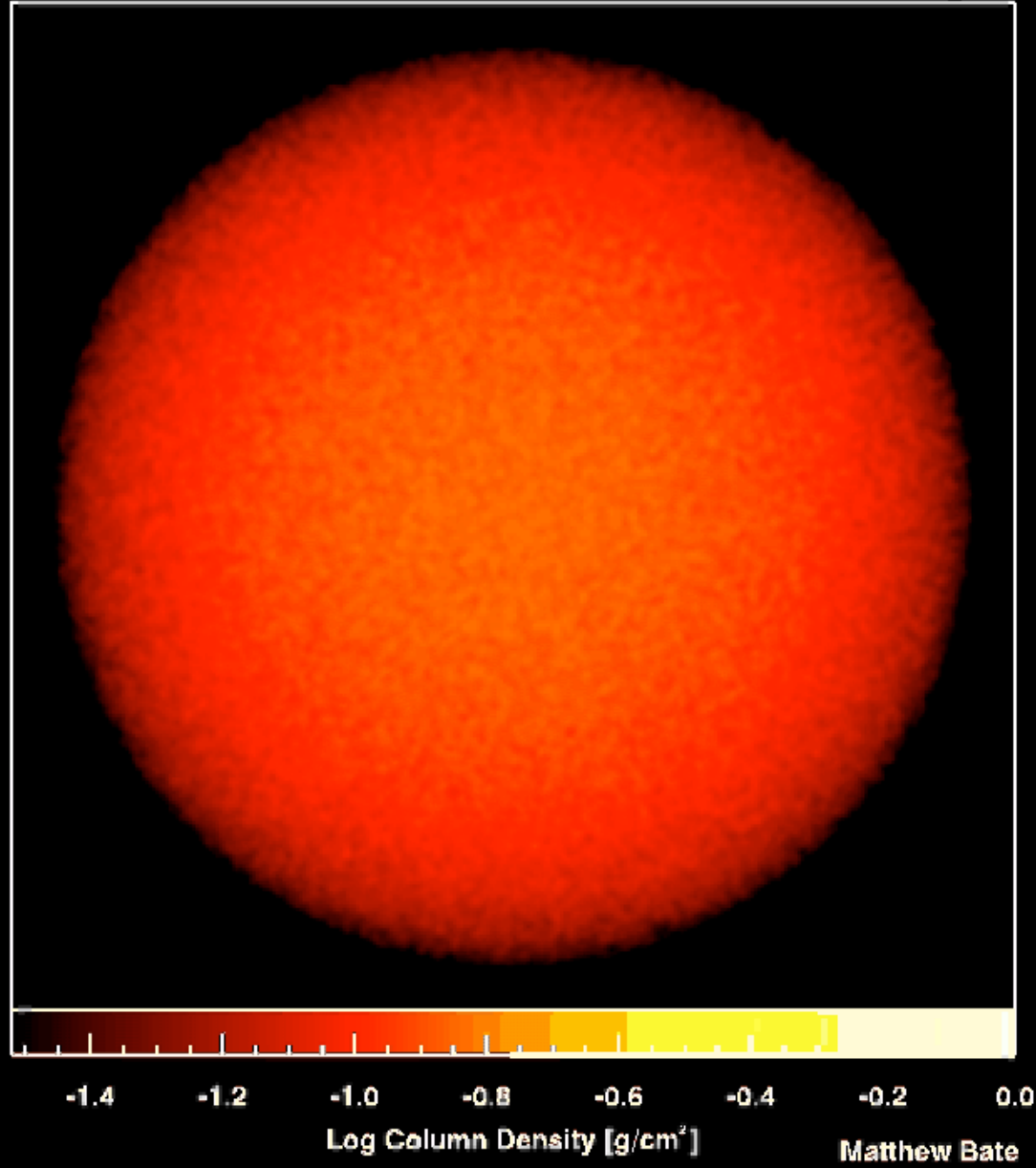
Today's Tour:

Optical and Infrared Views of Orion

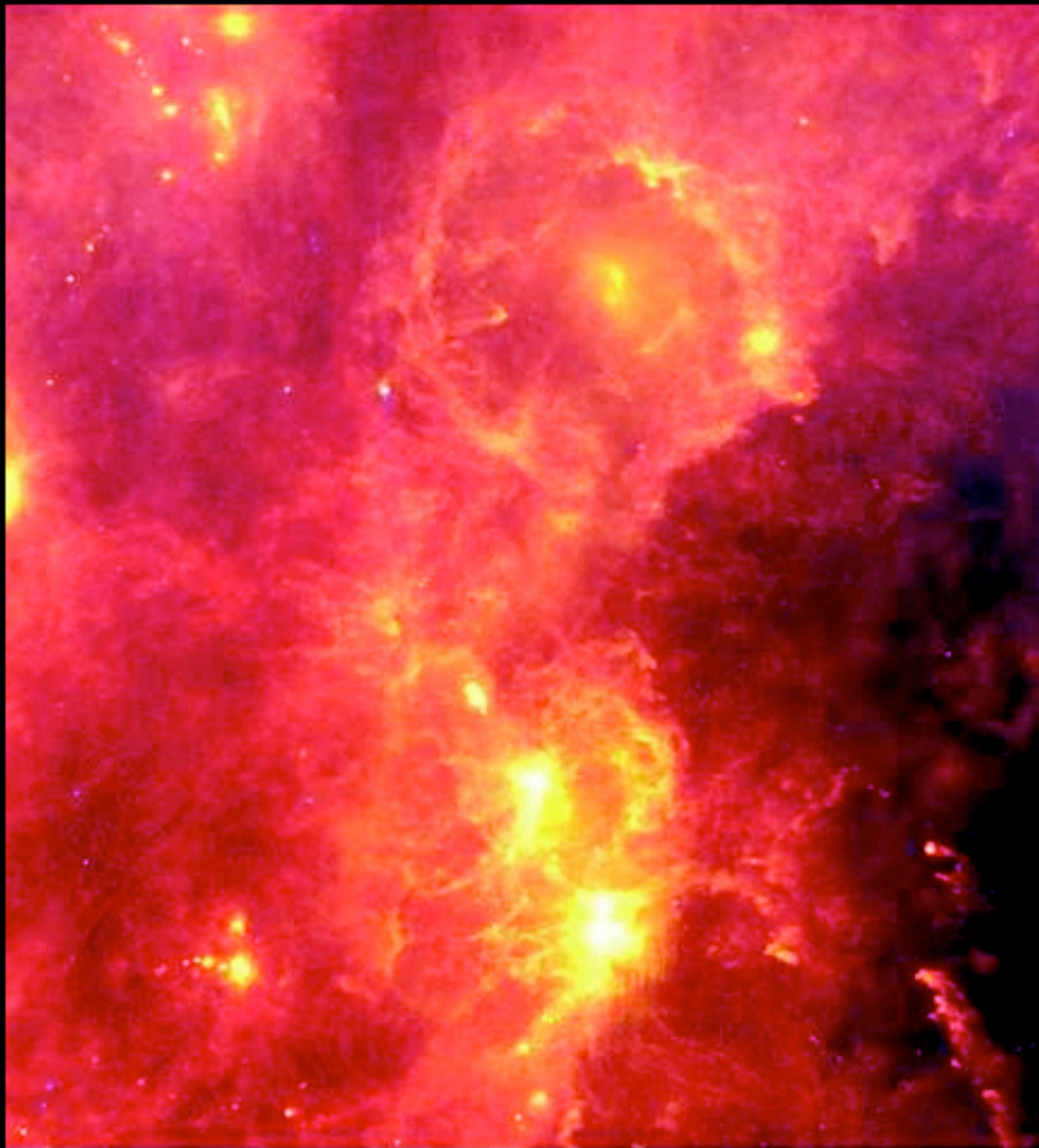
(Images prepared for upcoming "L-30 Press Briefing at NASA HQ, March 25, 2003)

Dimensions: 82500. AU

Time: 0. yr



Simulated
Star
Formation



Far-infrared Image

Orion



Near-
infrared
Image

Orion Nebula

SIRTF



's Space InfraRed Telescope Facility



Alyssa A. Goodman

Professor of Astronomy

Harvard University

(Far-)Infrared Astronomy

