Imagens da Terra
Como tudo começou?

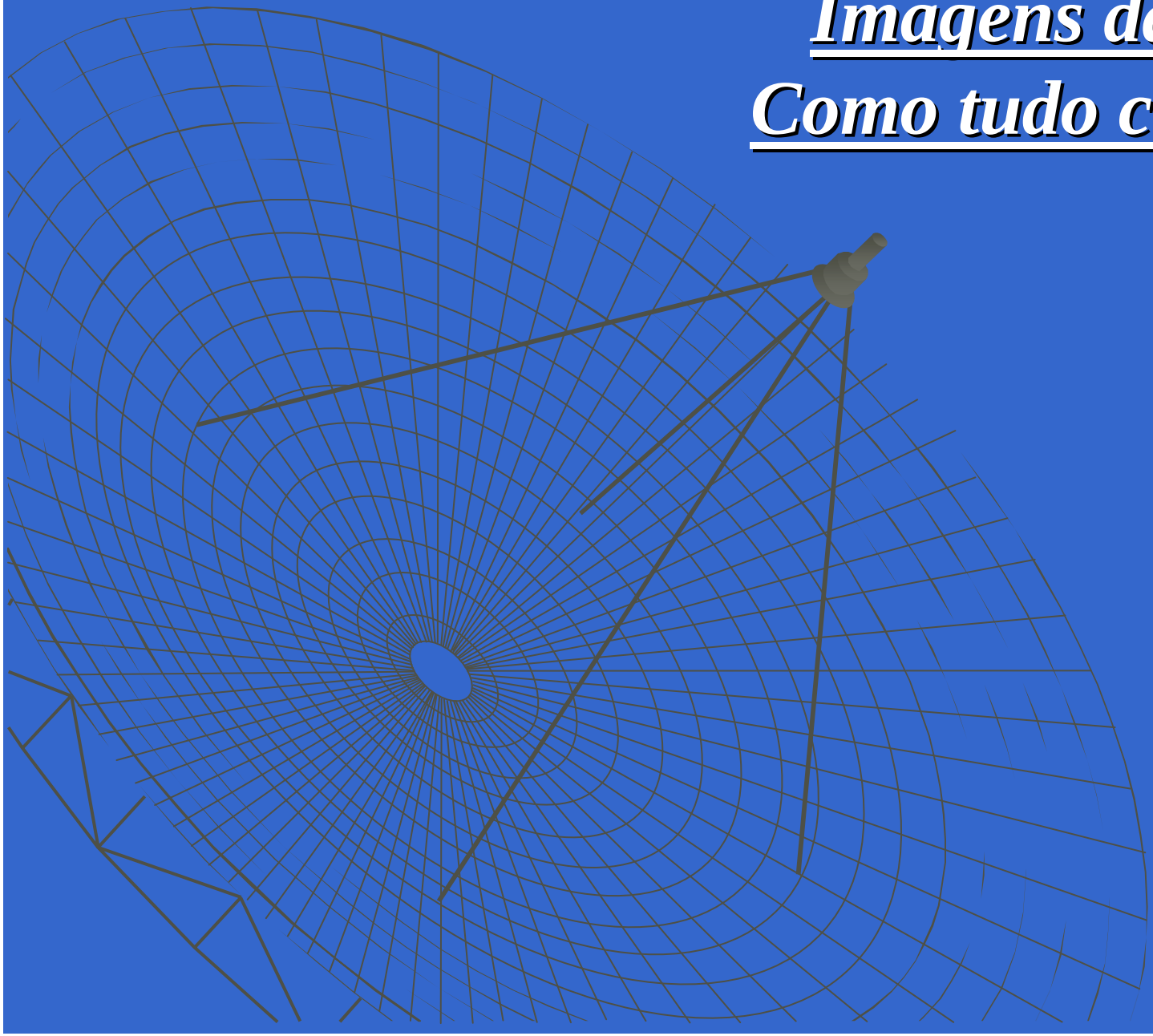
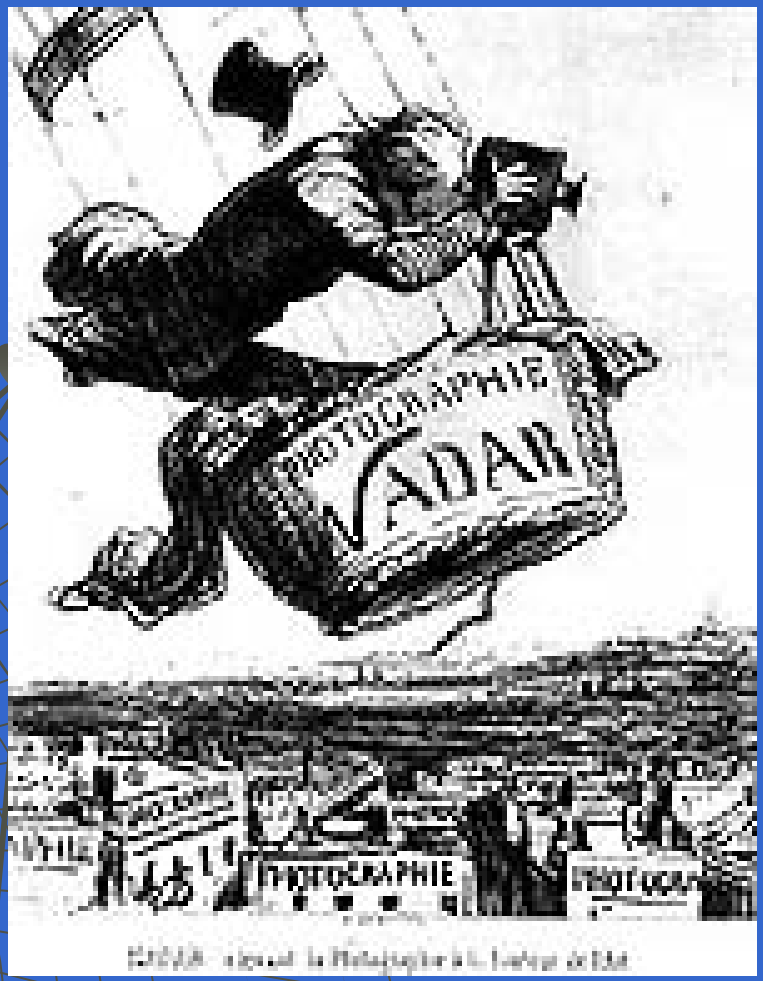


Imagem que ficou consagrada como a origem da fotografia só foi obtida por Nièpce em 1826.

Em 1849, o Coronel Aimé Laussedat, um oficial do exército francês, utilizou um sistema fotográfico desenvolvido por Daguerre embarcado em um balão para obter fotos cuja finalidade era o mapeamento topográfico.



O vôo de Nadar **(Tournachon)** em **balão** sobre Paris em 1858

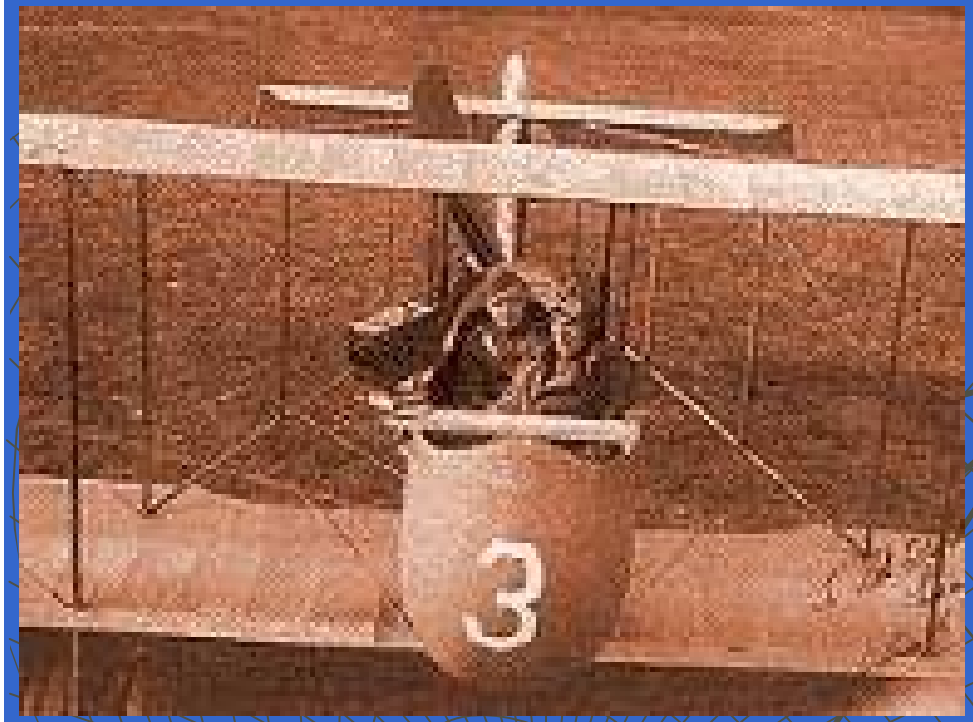
Primeiro corpo de balonista de um exército.
Guerra Civil americana - 1862

Ballon observing the battle of Antietam

Fonte: http://americancivilwar.com/pictures/

Uma câmara desenvolvida e patenteada por Julius Neubronner em 1903 cuja particularidade era de ser acoplada a um pombo, pois pesava apenas 70 g.

Fonte: http://www.esteio.com.br/newsletters/paginas/002/o-historico.htm/

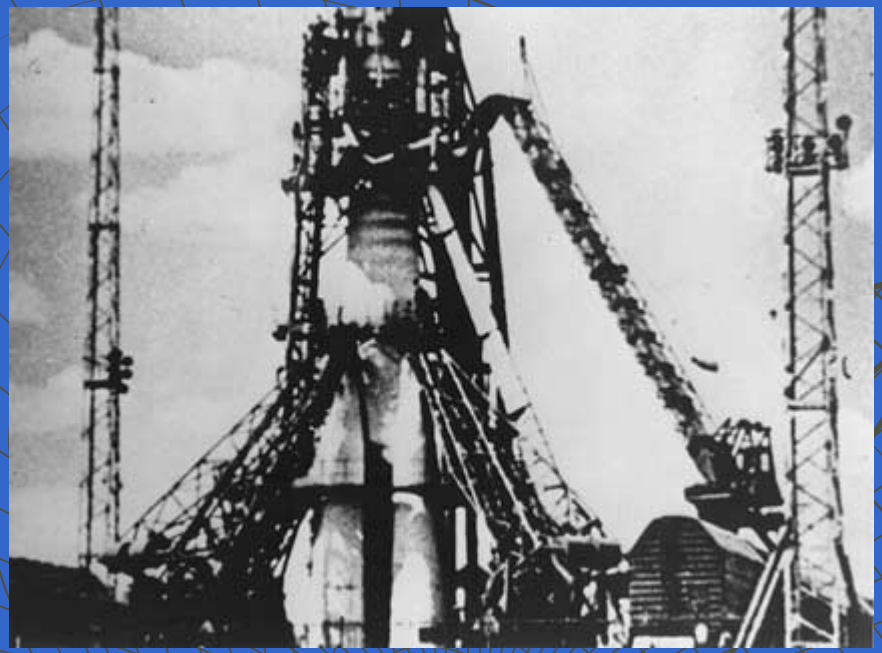


Uso intenso de fotografias aéreas durante as I e II Guerras Mundiais, para o reconhecimento, detecção de posições inimigas e estratégia militar como um todo.

The First World War (1914-18) marked the transition between beasts-of-burden and mechanical vehicles providing the lion’s share of logistic support, though not always successfully.

Fonte: web.umr.edu/~rogersda/umrcourses/log3323/

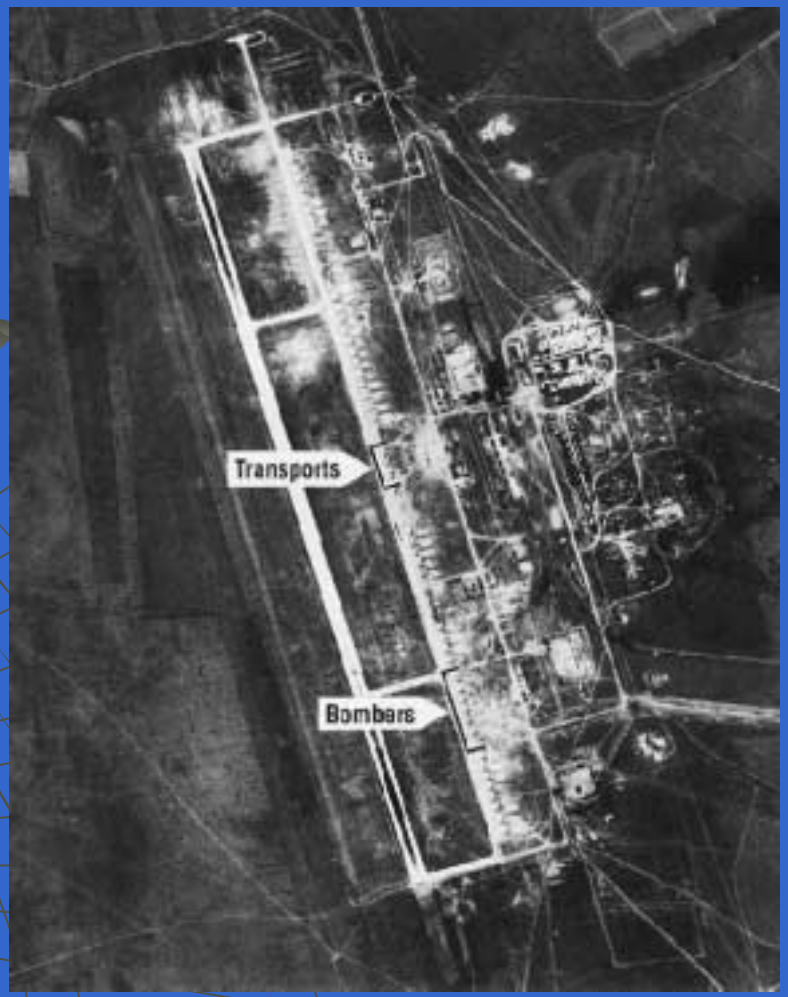
America invented what is now called the U2. The U2 flew at altitudes high enough to avoid radar detection and Soviet missiles. This worked until Soviet technology became improved enough to have radar that could locate and shoot down an airplane at high altitudes



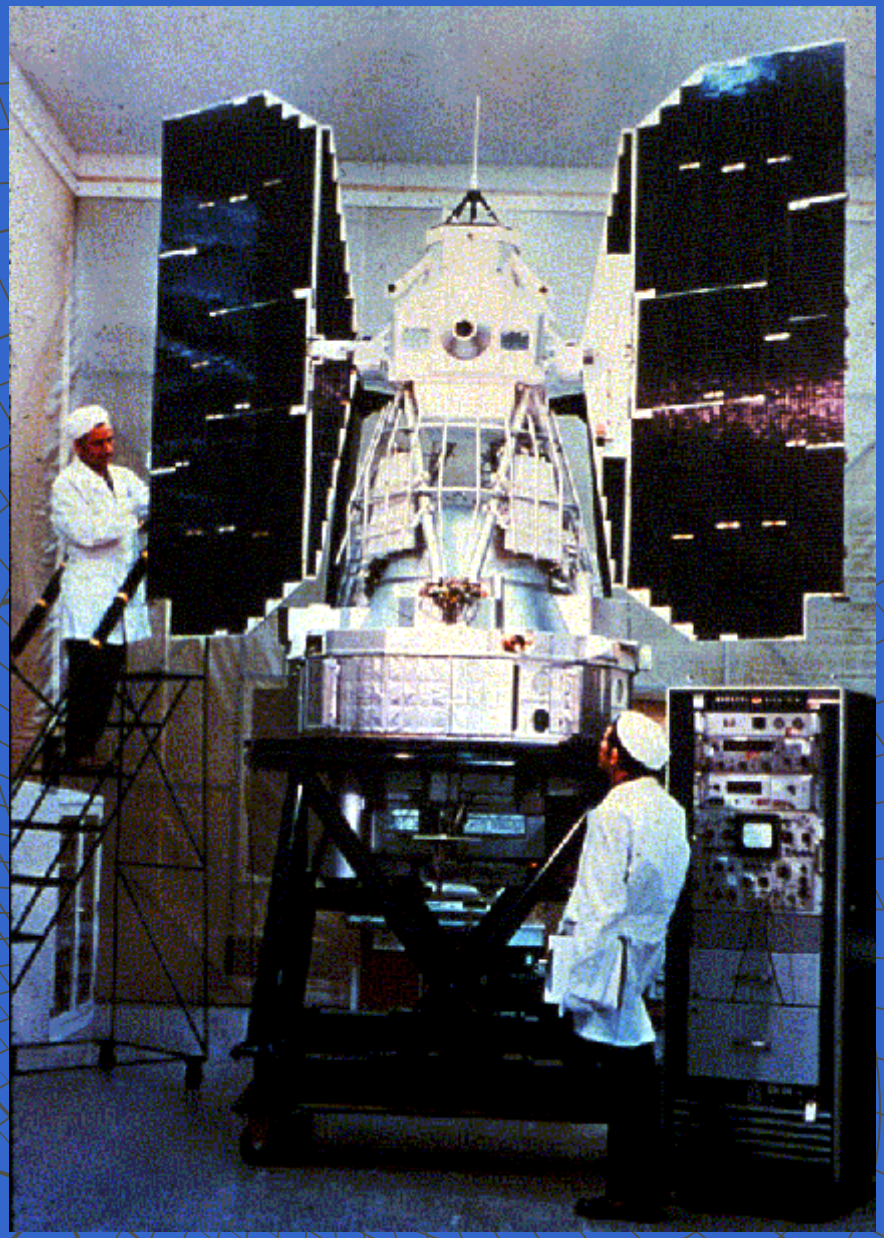
History changed on October 4, 1957, when the Soviet Union successfully launched Sputnik I. The world's first artificial satellite

The satellite was silver in color, about the size of a beach ball, and weighed a mere 184 pounds. Yet for all its simplicity, small size, and inability to do more than orbit the Earth and transmit meaningless radio blips, the impact of Sputnik on the United States and the world was enormous and unprecedented.

View of the launch of Mercury-Atlas 4 spacecraft from Cape Canaveral on Sept. 13, 1961.



CORONA was America's first operational space reconnaissance project. Its first successful mission was on August 18, 1960, and it operated for almost twelve years during the Cold War.



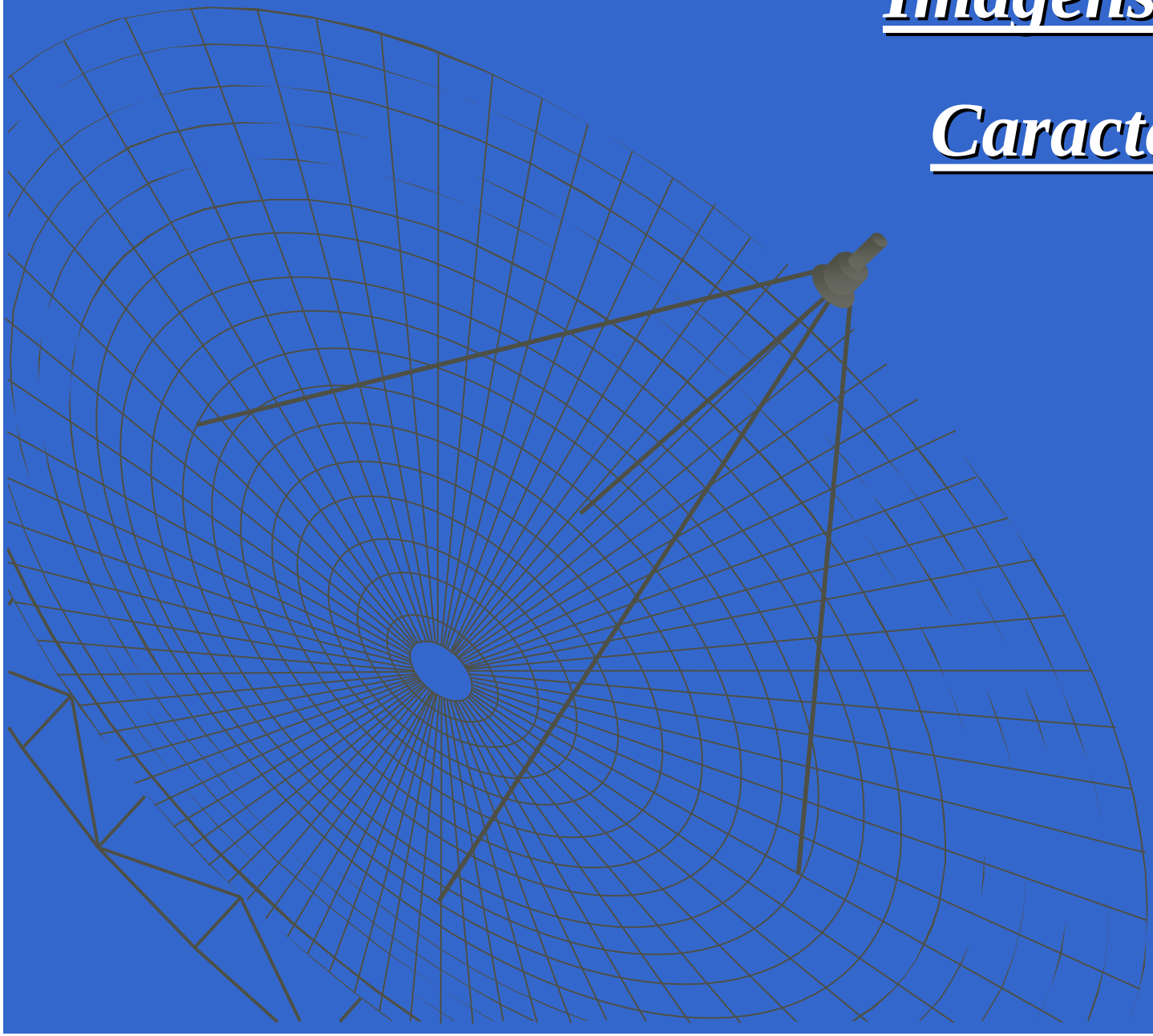
Renamed Landsat, ERTS-1 was the first in this series (seven to date) of Earth-observing satellites that have permitted continuous coverage of most of Earth's surface since 1972.

Concepção Artística do CBERS-2
em Órbita

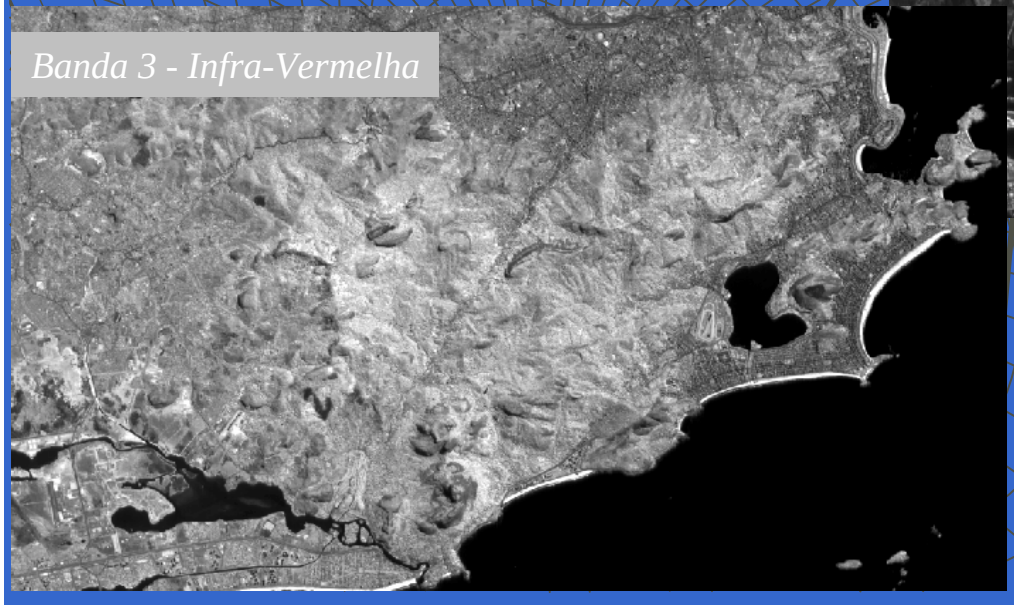
Lançamento do CBERS-2 em
21 de Outubro de 2003

Imagens da Terra

Características



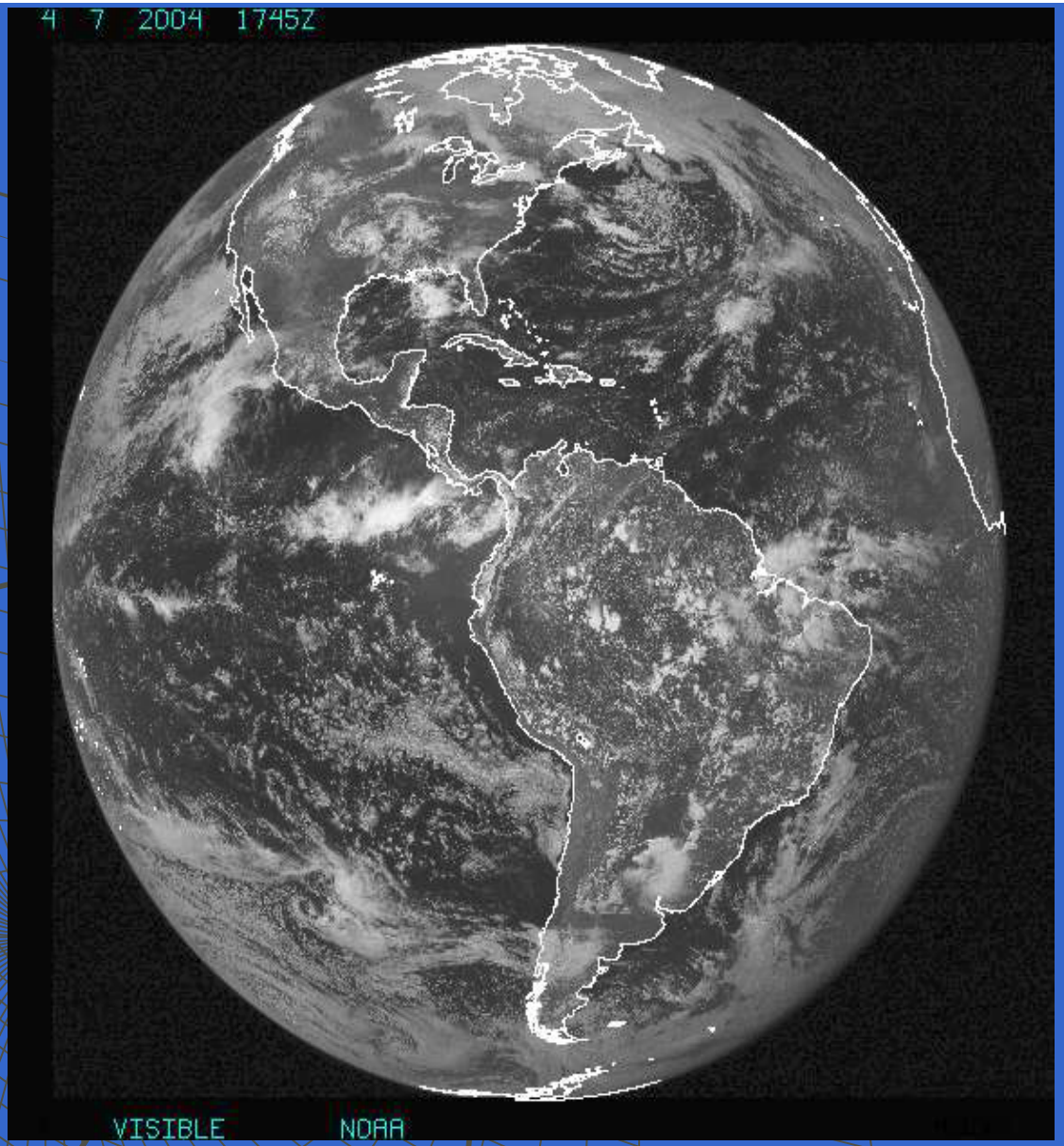
Resolução Espectral



SPOT - Maciço da Tijuca
1991

Resolução Espacial

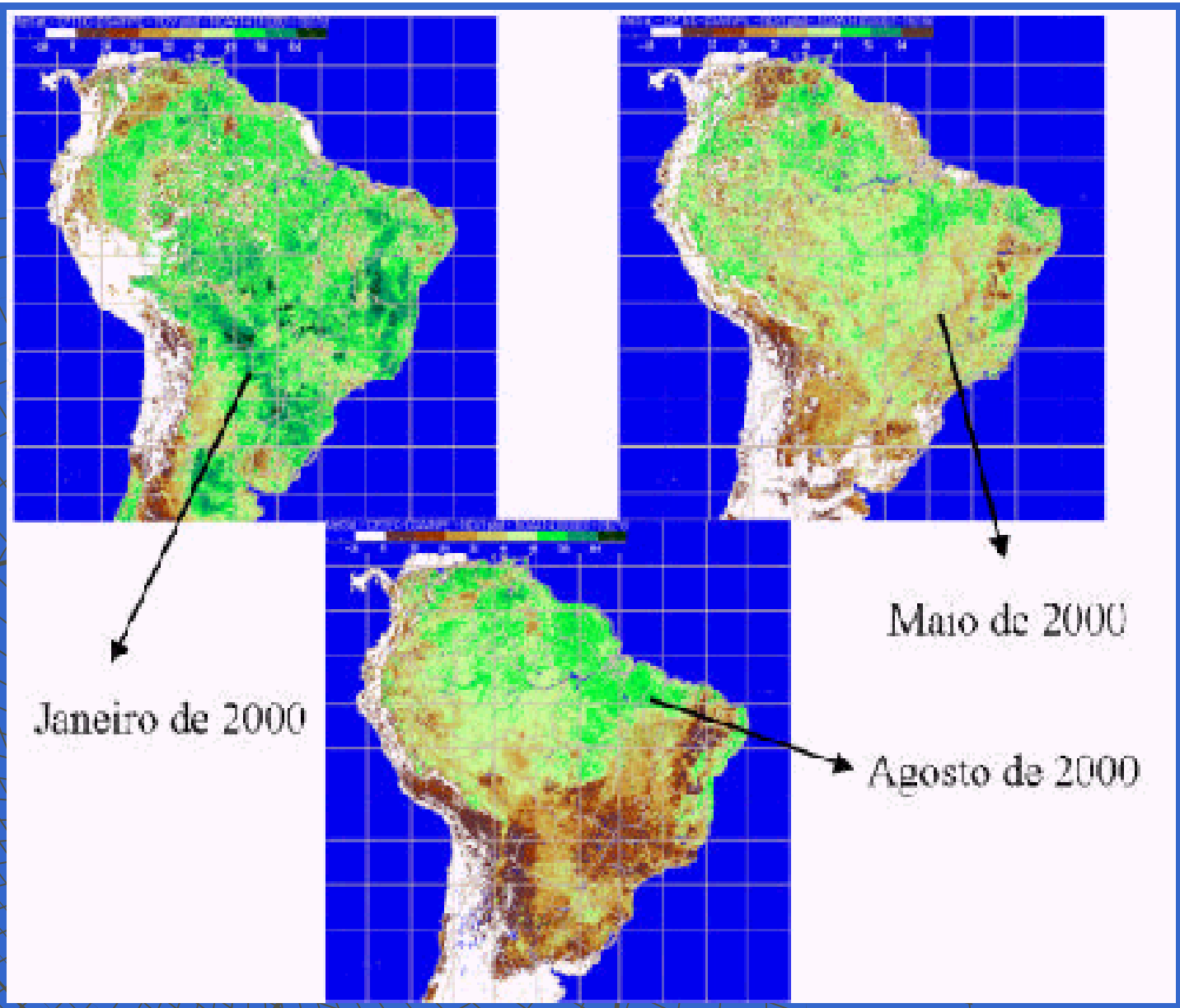
Temporal



Geostationary Operational Environmental Satellites - GOES

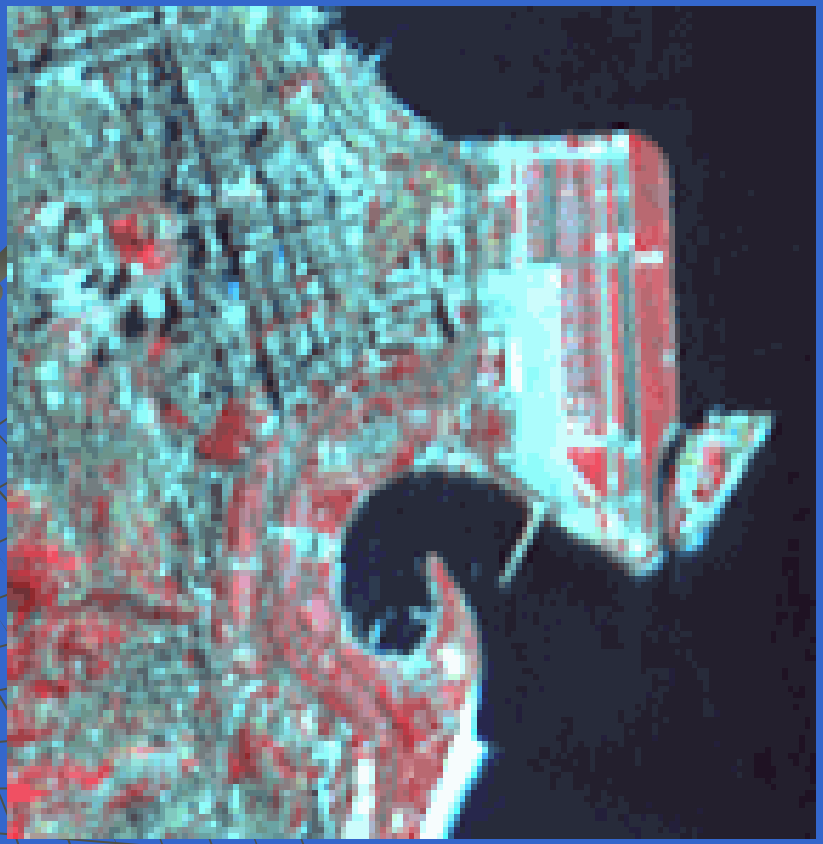
Resolução espacial 1 a 8 km

Resolução temporal 30 min



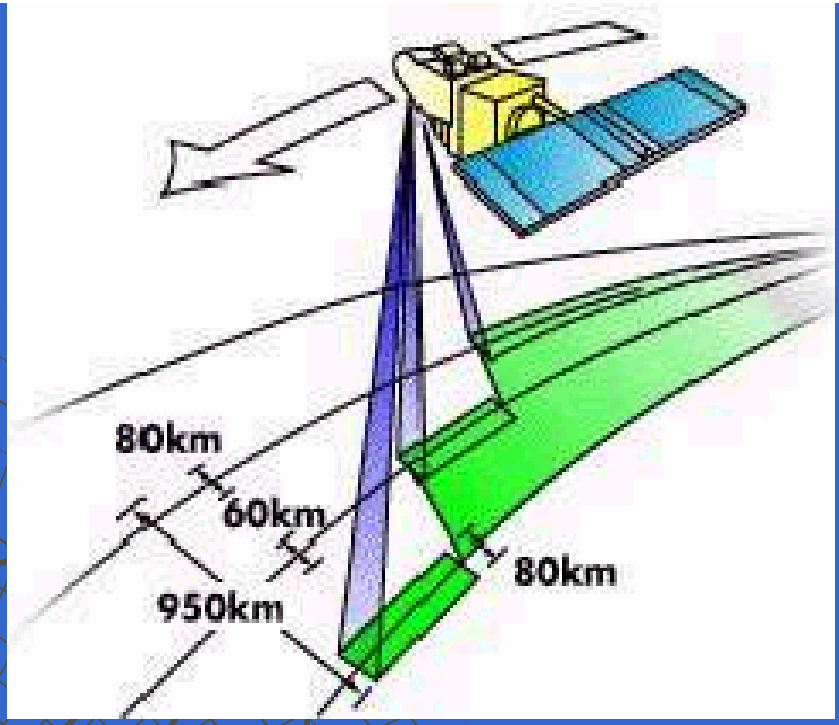
Mapas do índice de vegetação obtido através de dados do NOAA
Resolução espacial 1,1 km
Resolução temporal 12 h

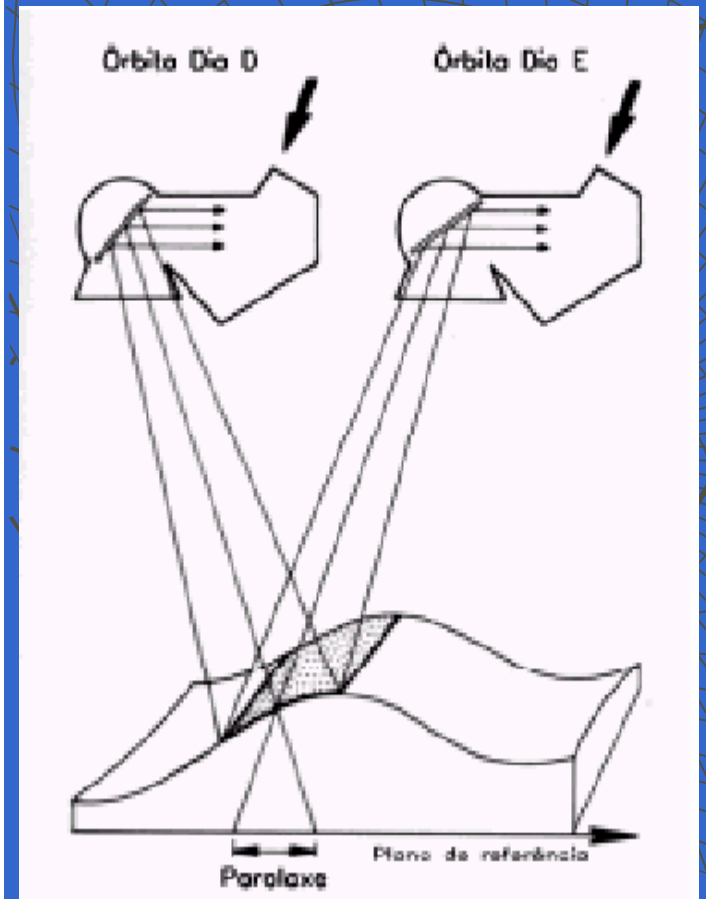
IKONOS 1- Enseada da Glória -
Resolução espacial 1 m
Resolução temporal 3 a 5 dias



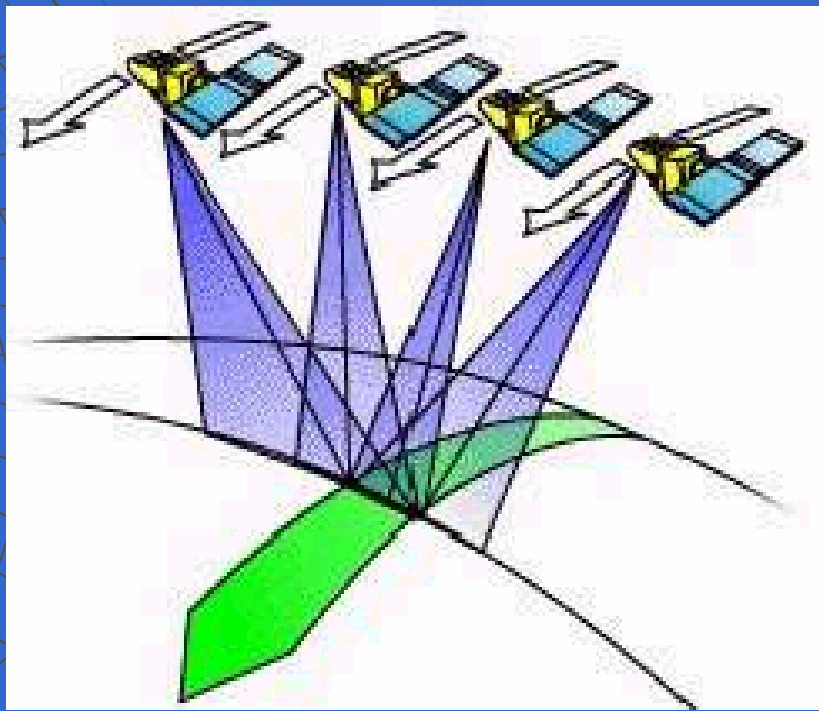
SPOT 4 - Enseada da Glória -
Resolução 20 m
Resolução temporal 26 dias
off nadir – 1 a 4 dias

Resolução Temporal

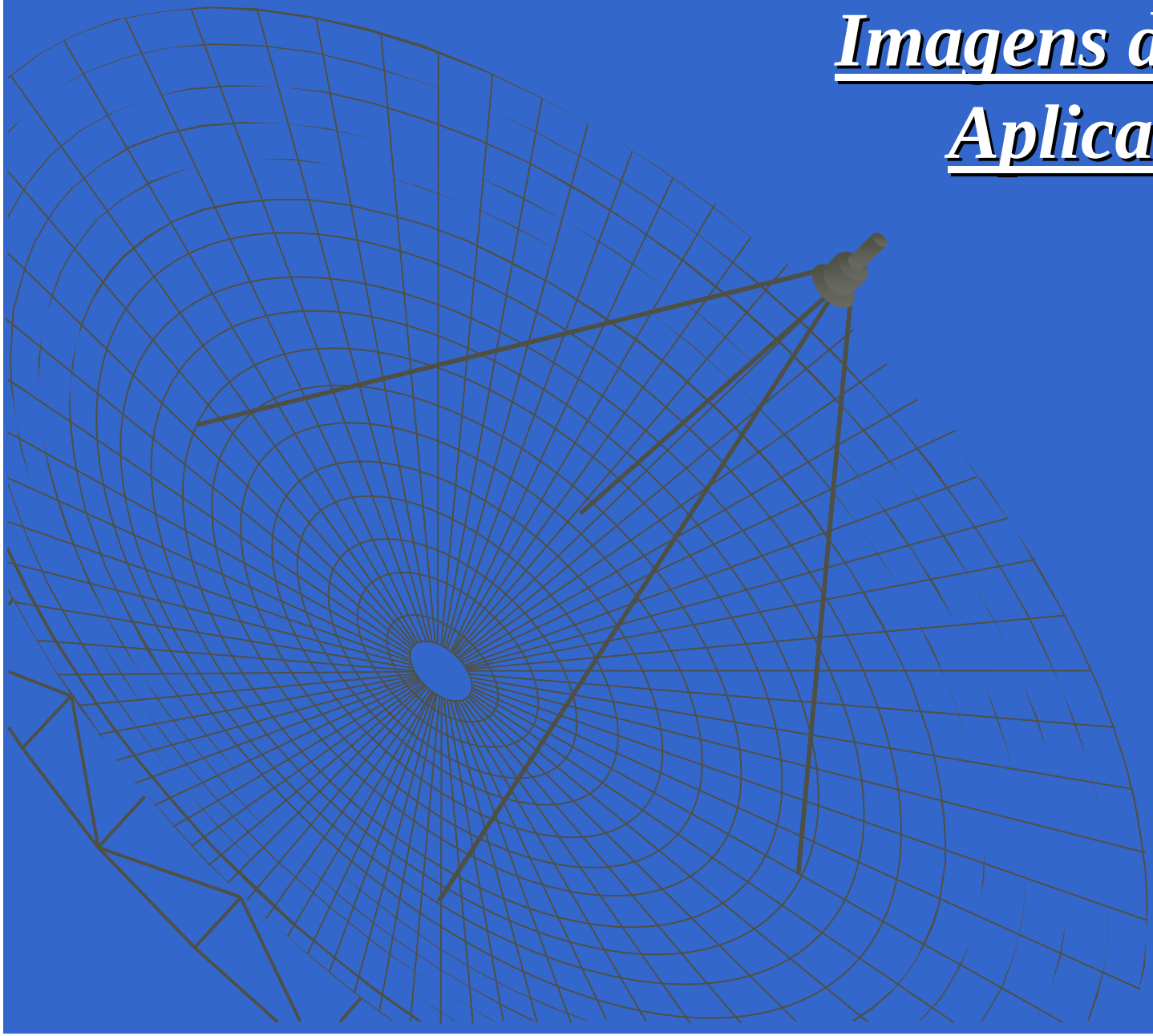




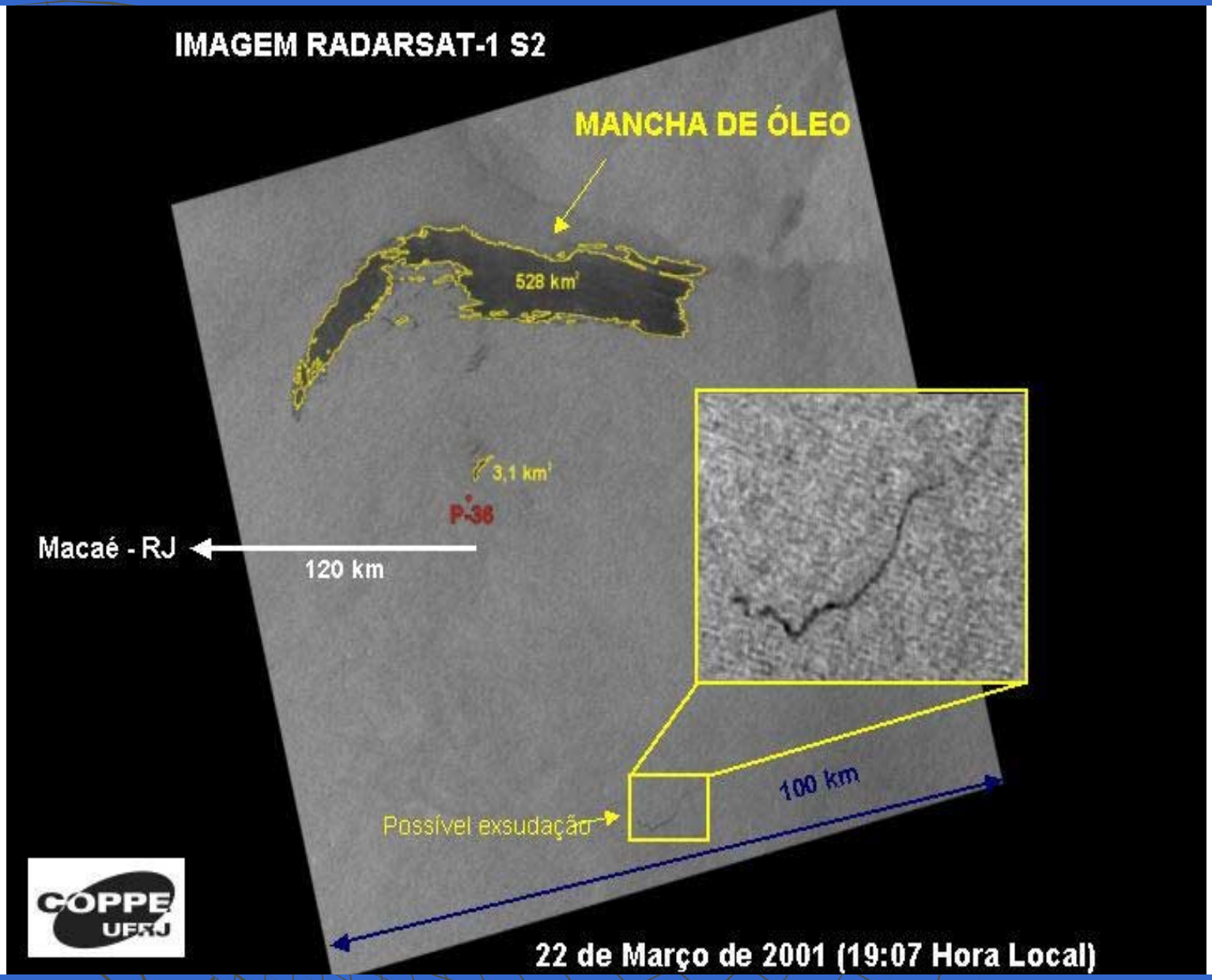
SPOT 4



Imagens da Terra
Aplicações

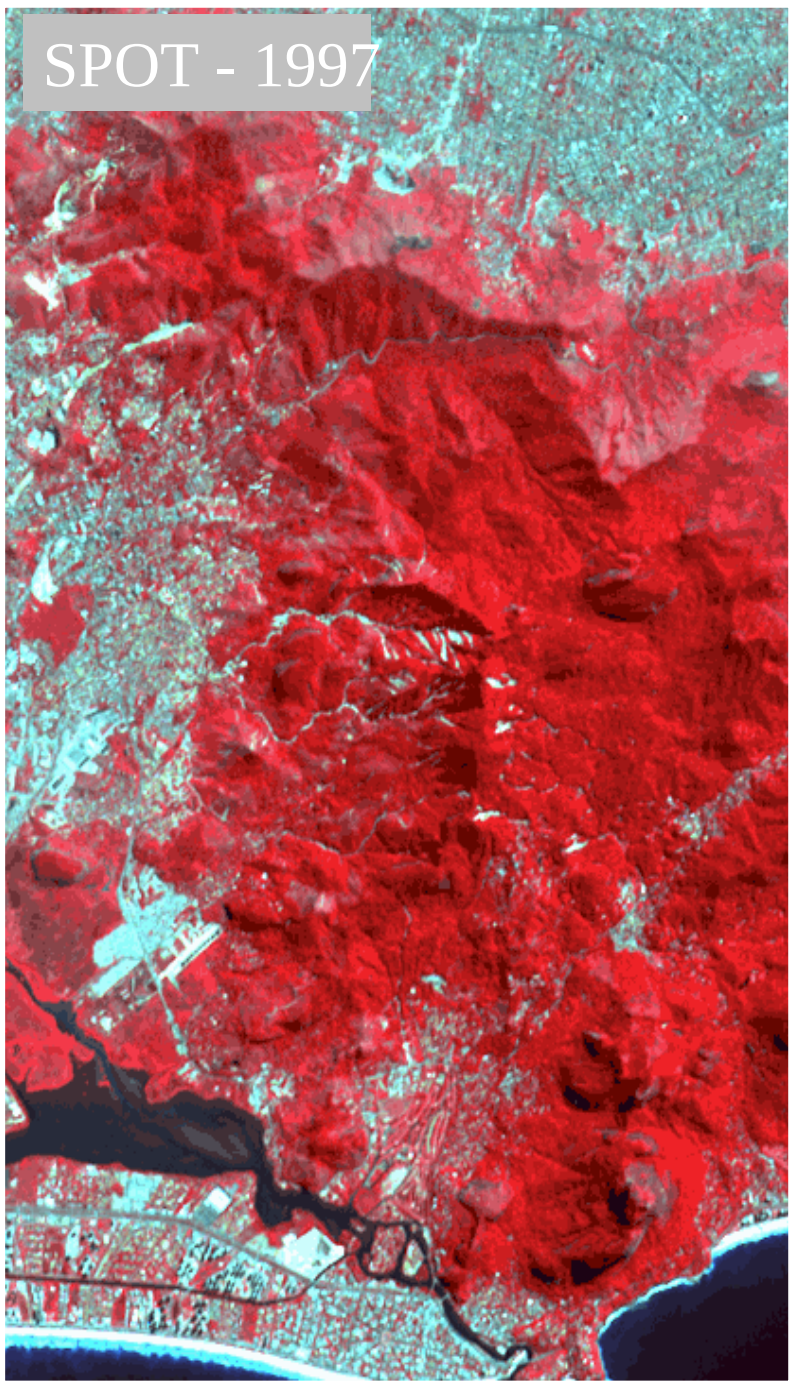


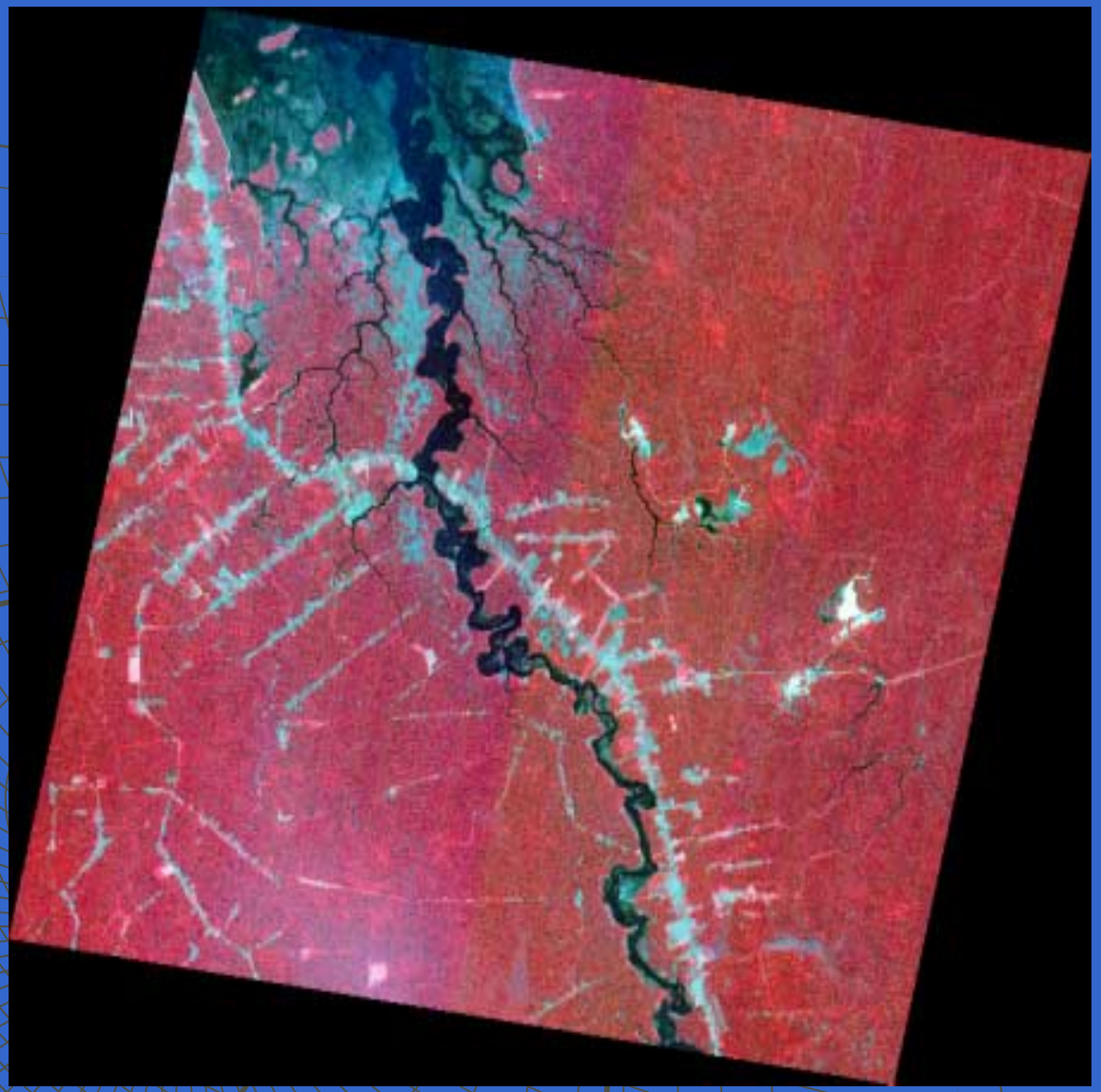
Monitoramento ambiental



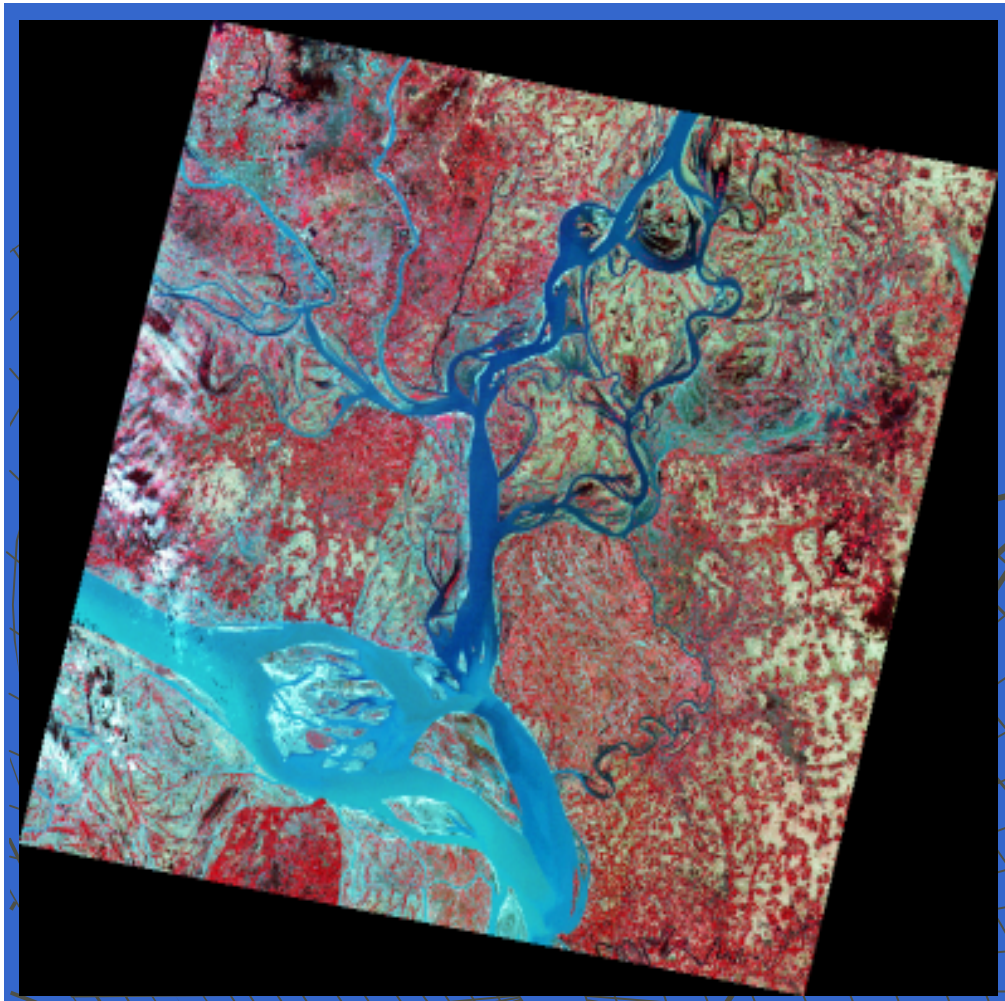

Inserir acidente na da petrobras na BG


SPOT - 1991

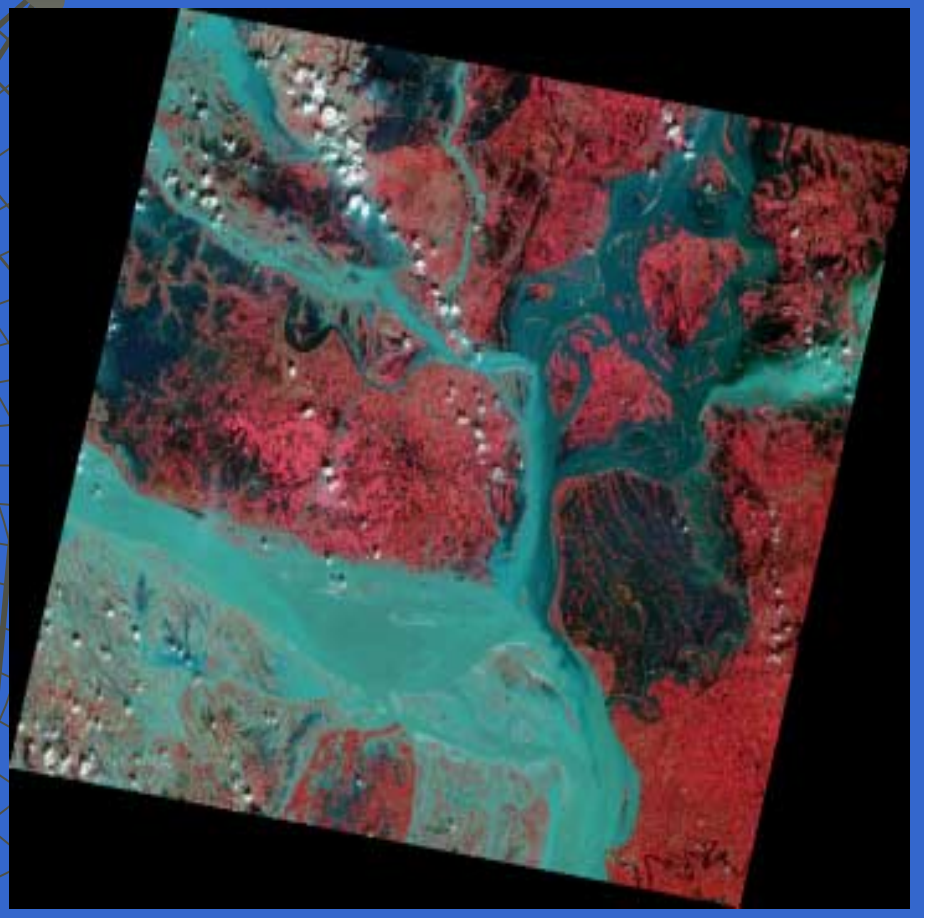

SPOT - 1997



This scene shows an area due east of Porto Velho, the capital of the Brazilian state of Rondonia in northwest Brazil, along the Brazilian and Bolivian border. A section of Highway BR-364 and the Jamari River bisect the tropical rain forest.
SPOT. 1992



This satellite image shows the central part of Bangladesh. The Meghna River flows southward towards its confluence with the Ganges River

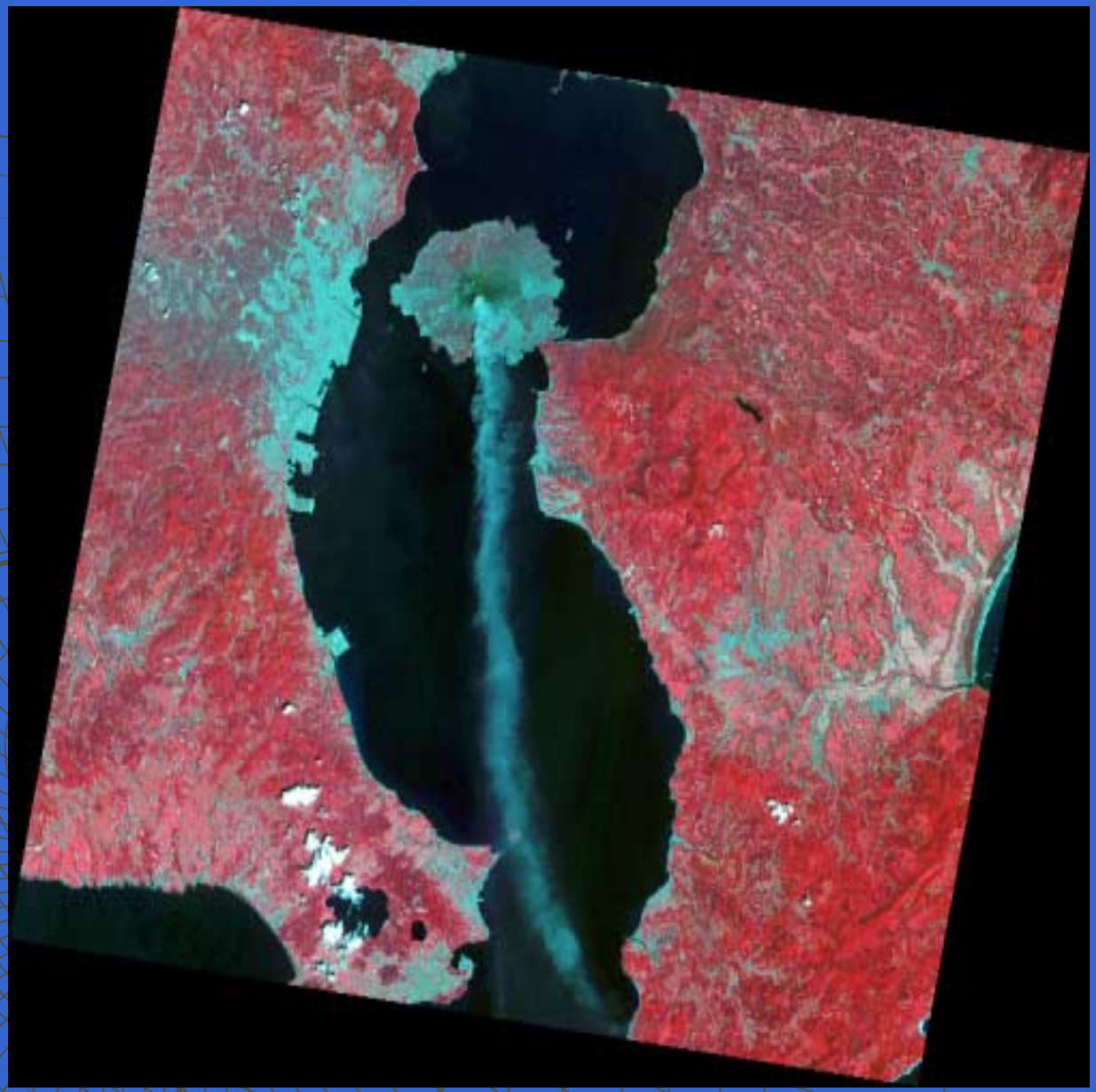


This satellite image shows the central part of Bangladesh. The Meghna River flows southward towards its confluence with the Ganges River,

SPOT. 1988

Acidentes

IKONOS -
Bacia de Campos,
Plataforma P34



Mount Sakura-Jima is an active volcano at the very southern tip of Japan. It is located in the middle of Kagoshima Bay, with a narrow piece of land linking it to the mainland. SPOT. 1986.

Cidade turística de Kalutara, no Sri Lanka- Cena obtida algumas horas após, o recuo do mar é nítido. Após invadir a cidade com ondas de até 10 metros de altura, as águas retornaram com a mesma intensidade rumo ao mar, deixando descoberto pelo menos 150 metros de praia. QUICKBIRD

Cidade de Banda Aceh, na região norte da ilha de Sumatra
23 de junho/2004

Cidade de Banda Aceh, na região norte da ilha de Sumatra
28 de dez/2004

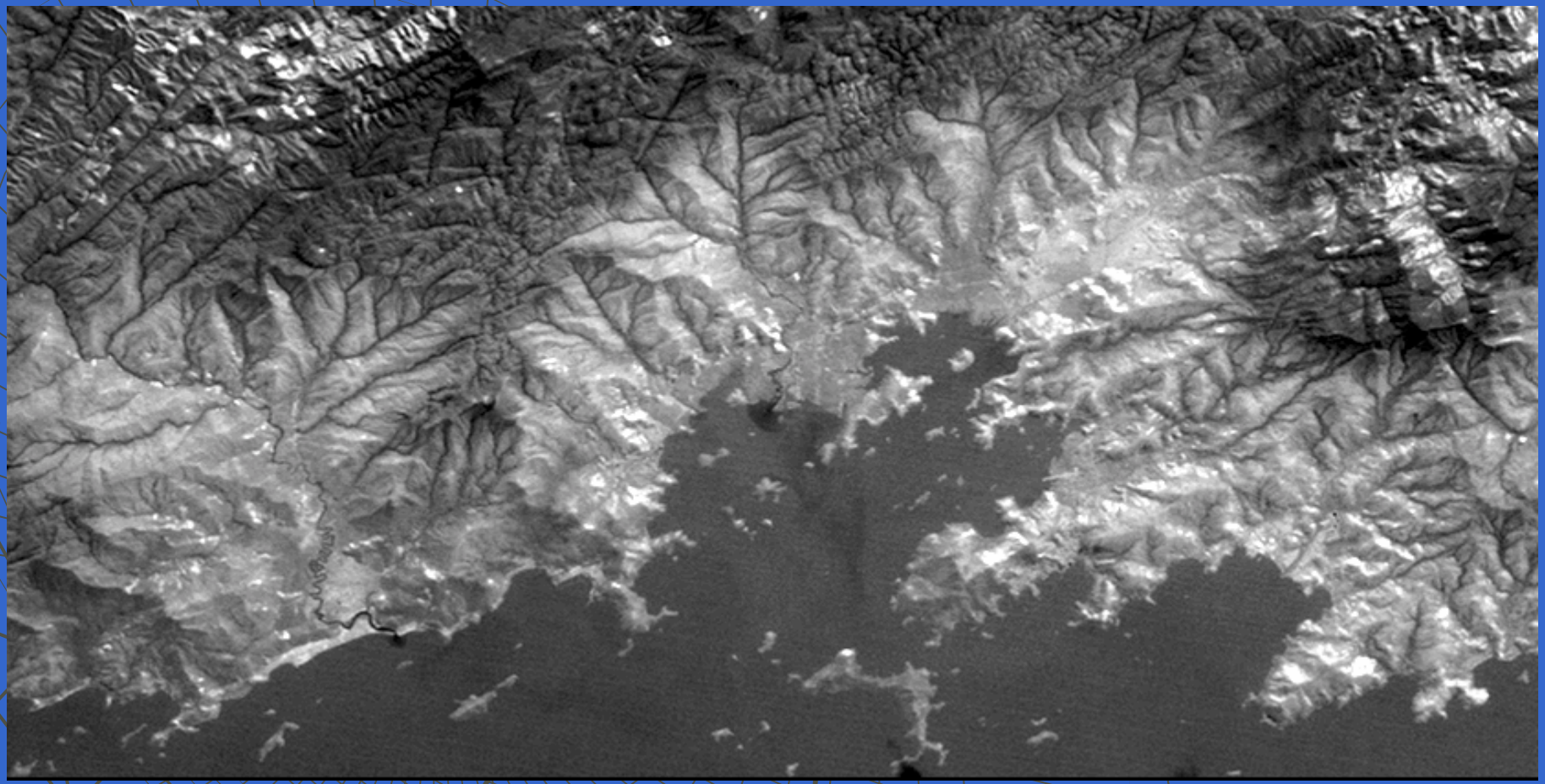
Projetos de Engenharia

IKONOS - Itaipu

Atividade Agrícola

Pivots de irrigação na região de **Andaraí - BA** Ikonos PSM Nível Carterra Geo
1m de resolução

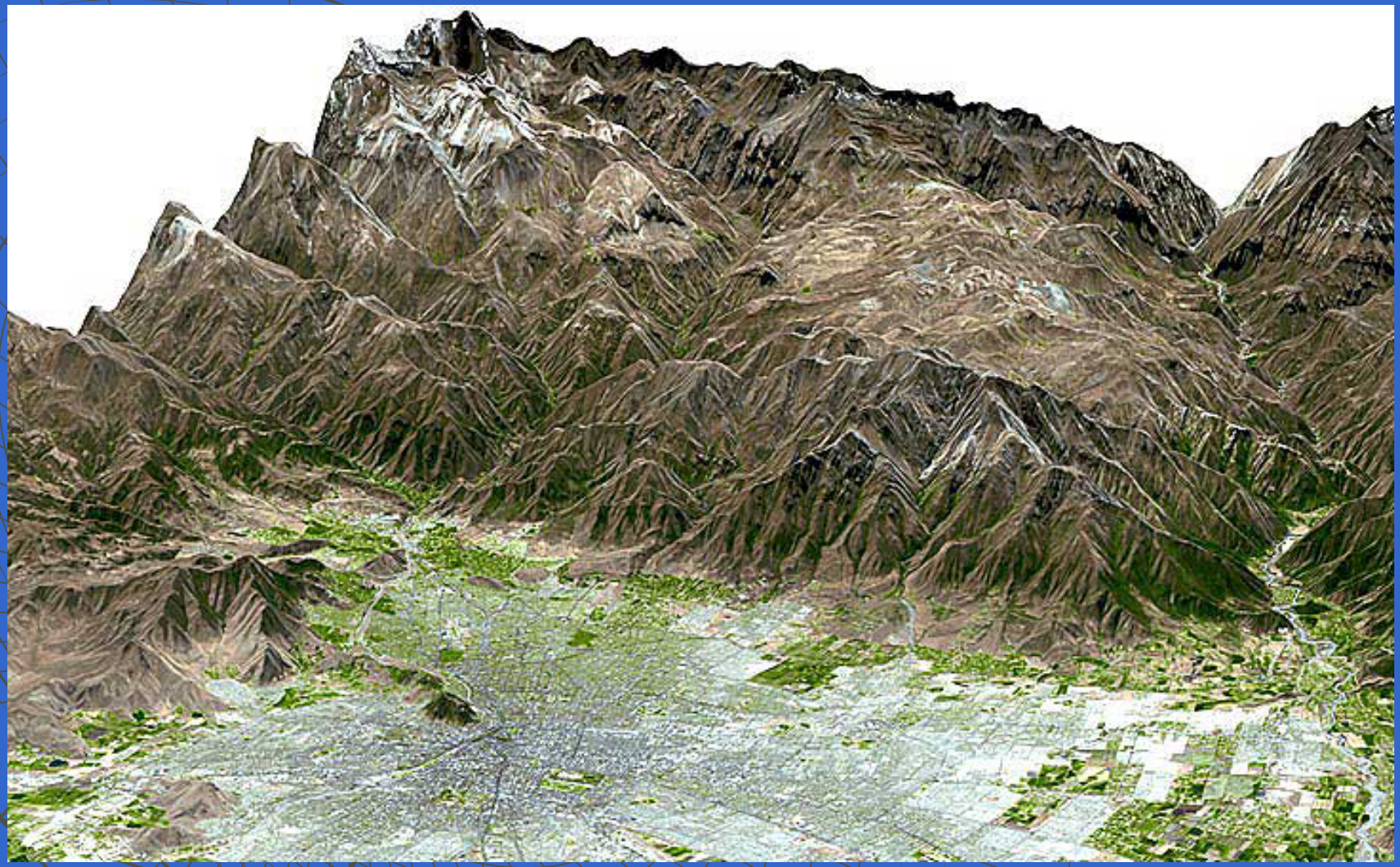
Estudos de temperatura



LANDSAT 7 - Angra dos Reis
2000

Modelo Digital de Terreno

Guaratuba - IKONOS



SPOT 5 - Santiago

Espaço como uma expressão das relações sociais e econômicas

Brasília, Brasil

Addawr, Iraque.

IKONOS

Servindo para fazer a Guerra

Basra, Iraq - 20 September 2001

Basra, Iraq - 23 March 2003

IKONOS

World Trade Center - setembro/2001

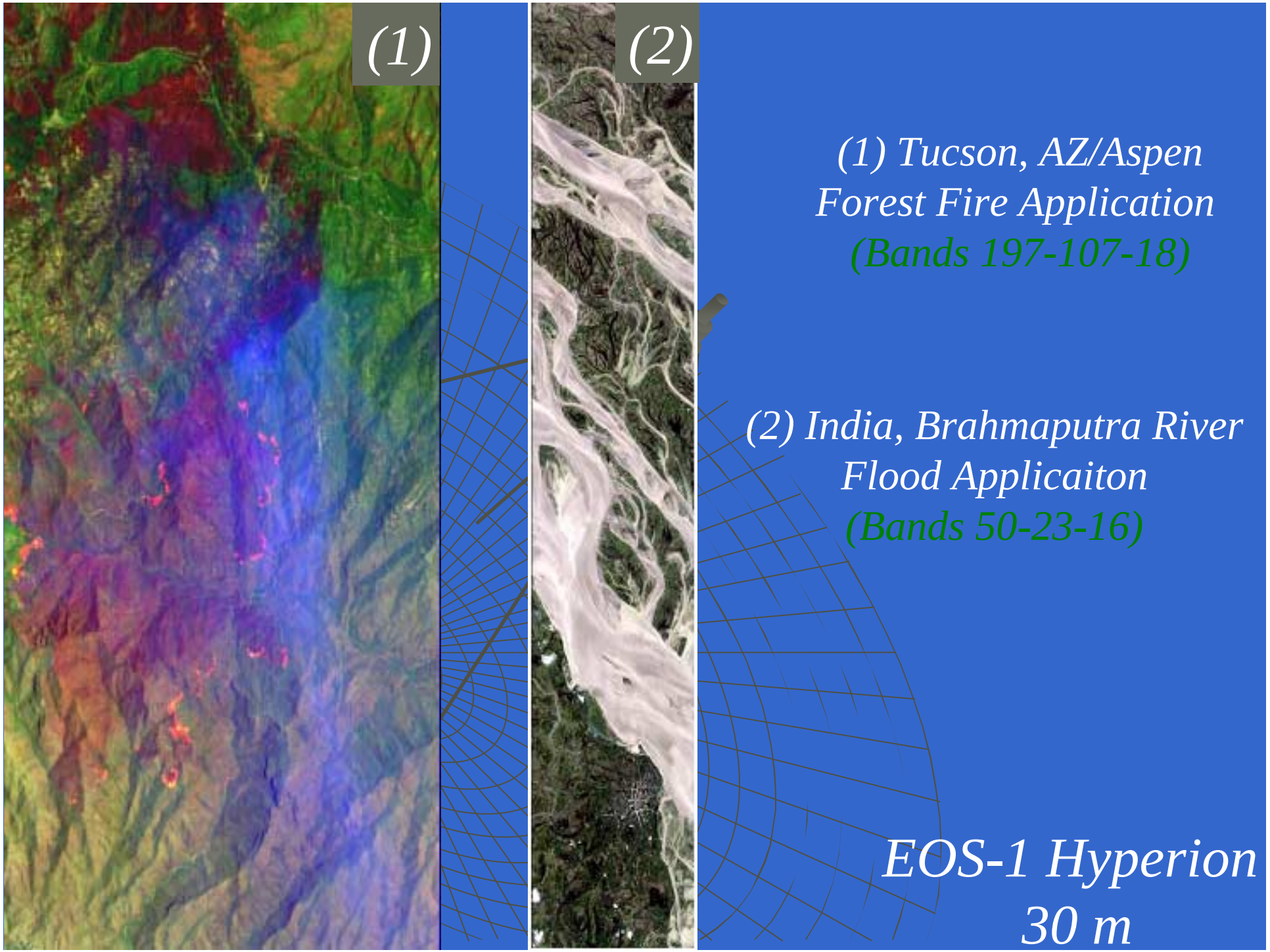
IKONOS - Pentágono - 2001

Mount Etna - July 22, 2001

ALI Pan Enhanced
Bands 3-2-1

Hyperion
7-5-4 Equivalent

EO-1 ALI
Bands 7-5-5'


(1)
(2)
(1) Tucson, AZ/Aspen
Forest Fire Application
(Bands 197-107-18)
(2) India, Brahmaputra River
Flood Applicaiton
(Bands 50-23-16)
EOS-1 Hyperion
30 m