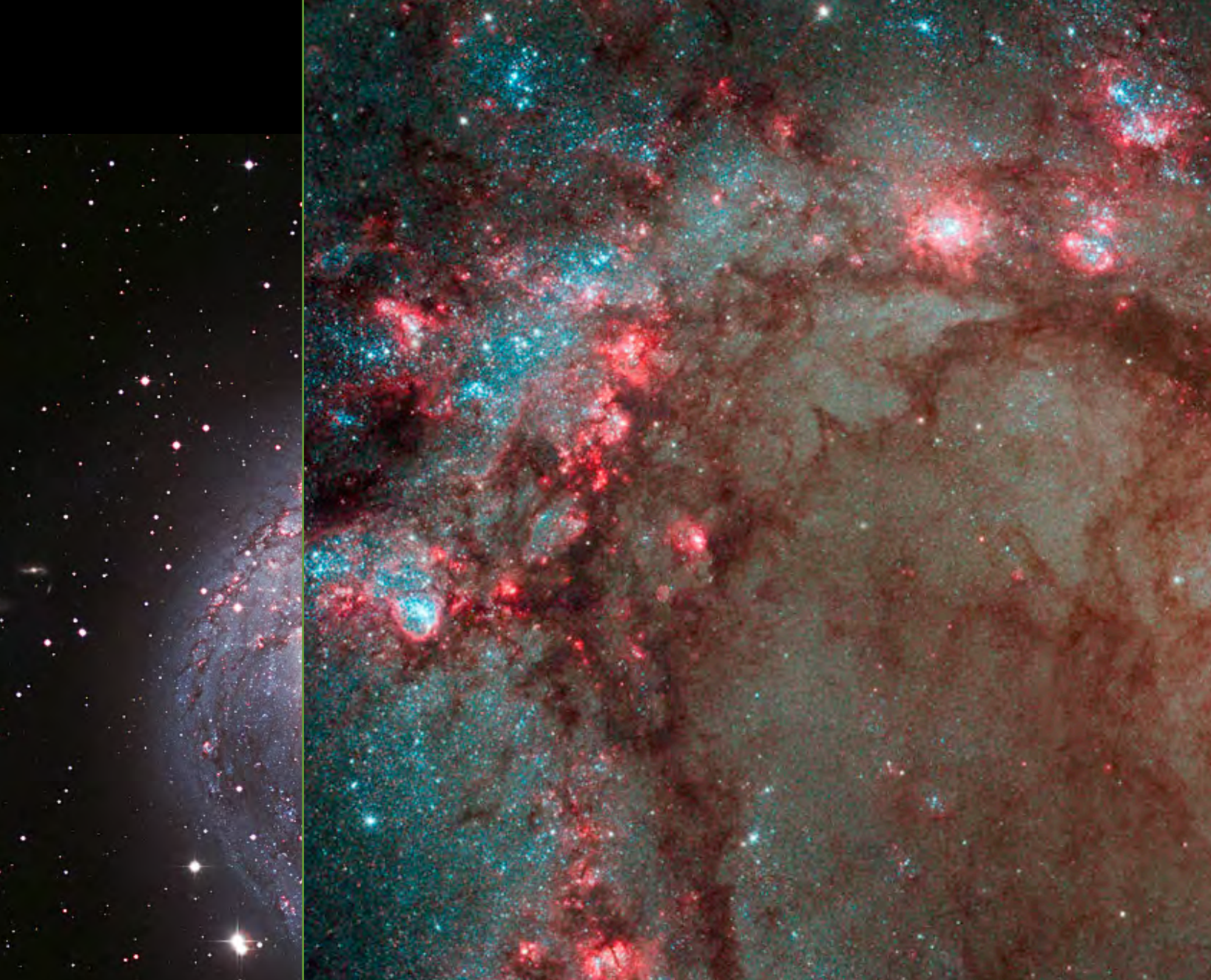


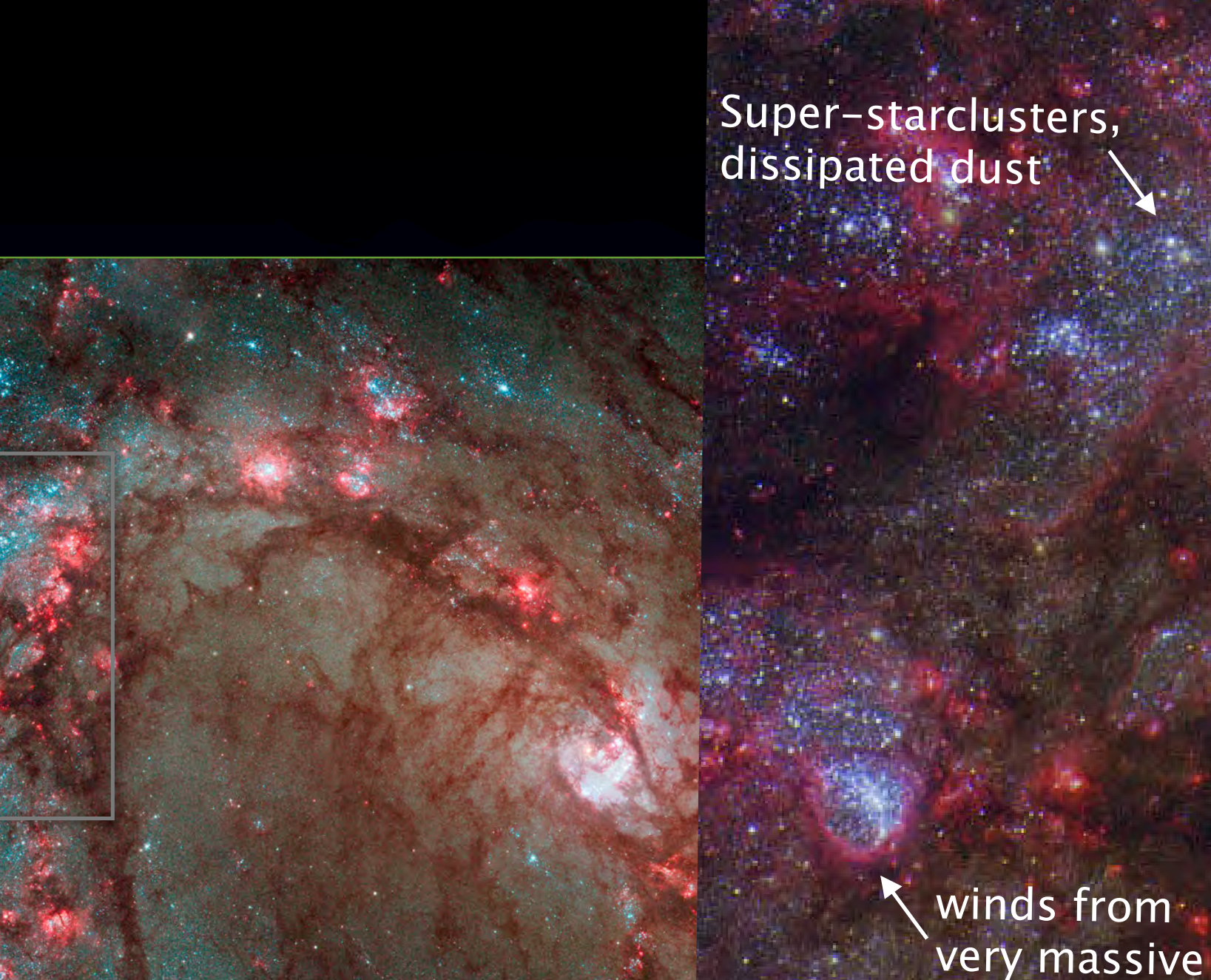
STUC
Nov 2009

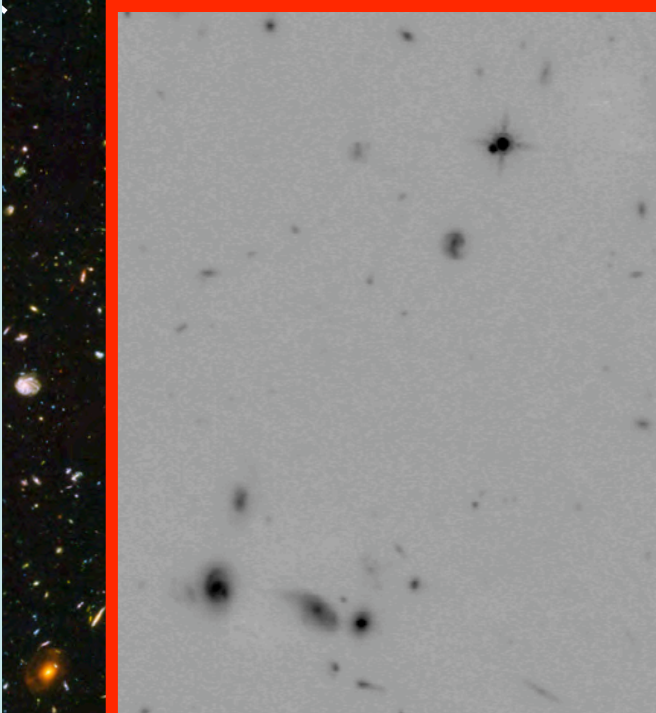
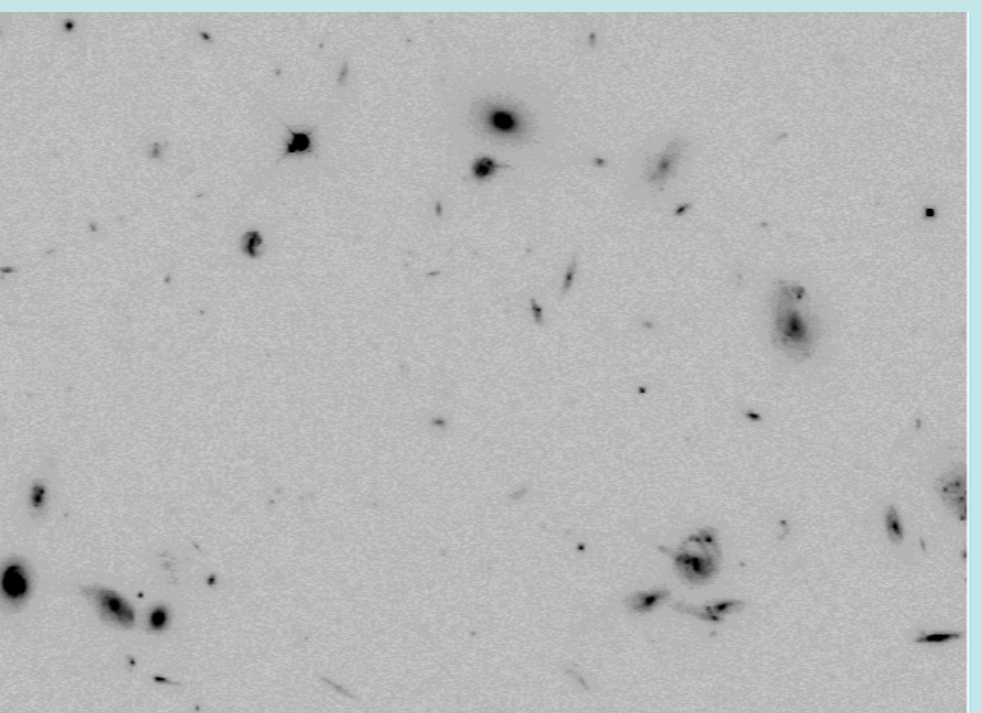
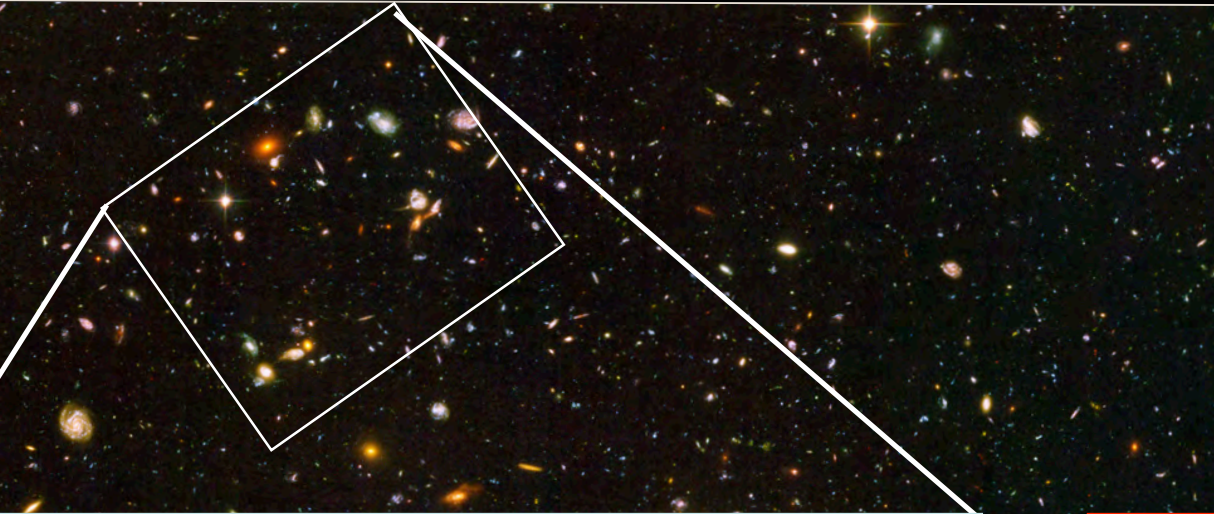


Super-starclusters,
dissipated dust

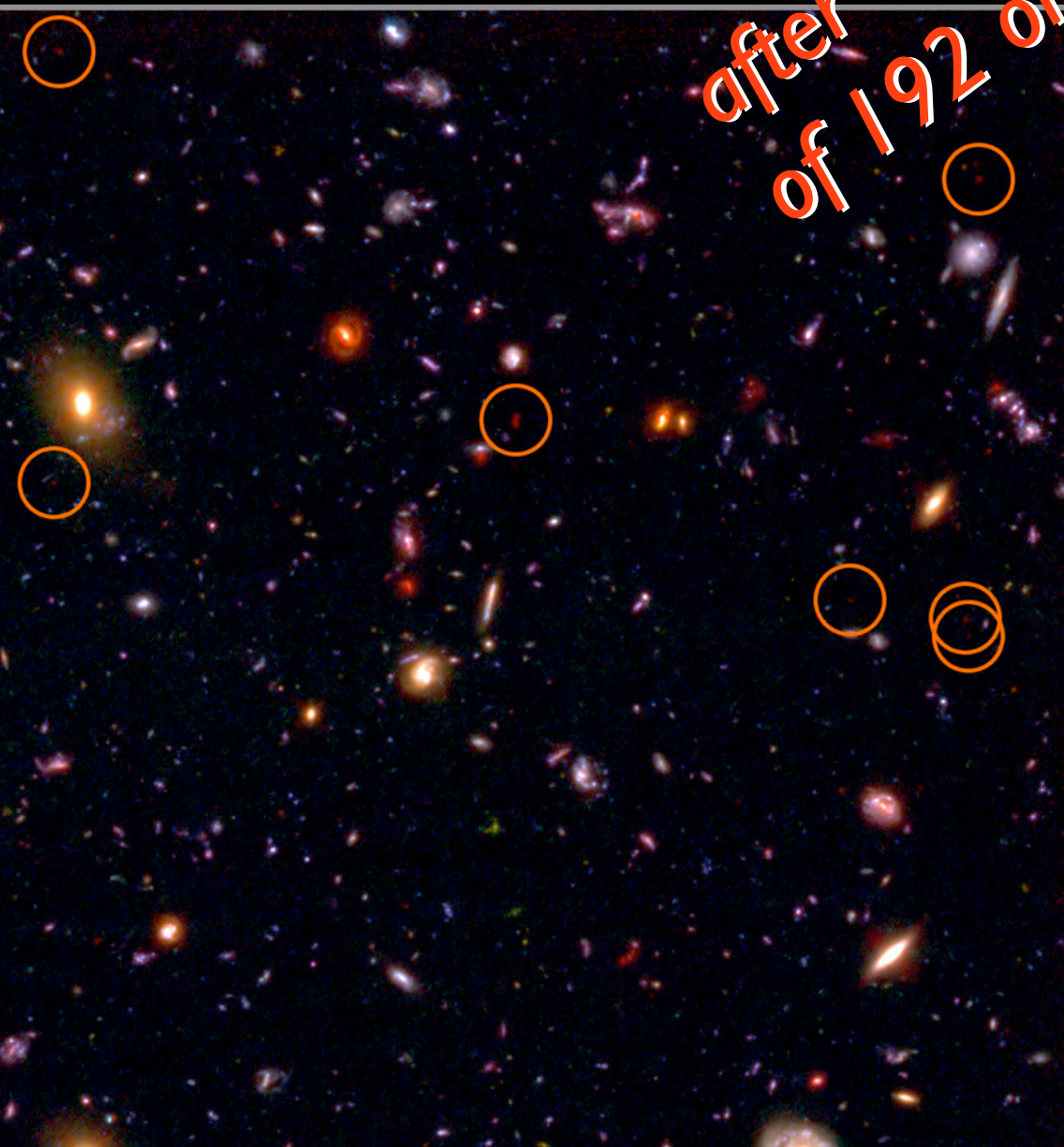


winds from
very massive





after only
of 192 orbits



→ $z \sim 8$ galaxies
Bouwens et al.

→ Galaxy
McLure et al.

→ Galaxy for
the reionization
Yan et al., A

WFC3/IR F105W +
F125W + F160W

ACS F814W + F850LP

Time frame during STS

HubbleSite Hits



Neatly fixed Hubble captures sharpest images yet. At THE UNIVERSE, IN FOCUS

DIANAPOLIS STAR

OBAMA: NOW IS TIME TO ACT ON OVERHAUL

PUTERS TERIODS

WHAT IT COULD DO

Homeless teenager, drug addict award-winner

Speech Doublet interview pages 32-33

THE TIMES

Newspaper of the Year P.M. Thursday September 10 2009 timesonline.co.uk No 69737

Fury over hostage raid

Brown criticised for attack to free journalist

James Hider Kabul Philip Webster Political Editor Michael Evans Defence Editor

Hostage negotiators expressed shock and anger at Gordon Brown's decision to approve a commando raid to free a kidnapped British journalist, saying that they were within days of securing his release through peaceful means.

Stephen Farrell — who was in Afghanistan for The New York Times — was not harmed in the raid but his Afghan translator, Sultan Mersad, and a British soldier from the Special Forces Support Group were killed. The men were being held at a house in Kandahar in northern Afghanistan. Just after midnight on Tuesday US helicopters dropped British special forces and Afghan troops in the village. Taliban militants fled the house and a fierce battle ensued. At least one civilian and scores of militants were killed.

Defence sources said that intensive efforts had been made over the weekend to locate the hostages and assess the strength of the Taliban presence.

They said there were no guarantees that a negotiated deal would have led to Mr Farrell's release and there were fears that he could be moved. However, several sources in Kabul said that the captors were, at worst, seeking a ransom. A Western source involved in the talks said: "There was no immediate urgency that they were going to be beheaded or handed over to another group. You cannot move them easily. It's a very isolated area."

Another Western official said: "It was totally heavy-handed. If they'd showed a bit of patience and respect they could have got both of them out without firing a bullet. Instead, they ended up having one of their own killed, the Afghan killed and civilians killed. There's a lot of pissed-off people at the moment."

The negotiations had begun within 24 hours of the kidnapping last week. The Interior Minister had persuaded 300 local elders to intercede with the kidnappers, saying that the hostages were just journalists doing their job. Reports and analysis, pages 6-8

IN THE NEWS

Iran 'may have enriched uranium for a bomb'

The US said that Iran may already have enough enrichment to build a bomb. Iranian officials defied sanctions. The Iran issue has dominated week-long board meetings of the International Atomic Energy Agency in Vienna. For

Climate killing

Cold will disappear if North Sea because change and not just researchers claim warmer temperatures away plankton. 11

Iraqi 'dictator'

The Iraqi opposition leader al-Maliki Minister, of the American-led coalition, has accused the Iraqi government of being a 'dictator'.

Freedom

Police in France have been criticised for a trade union design, which they helped to lower the level of hidden in

War

The French president, Nicolas Sarkozy, was to travel today to the east of driving a car or heading the east and thus reducing France's overall burden on the nation's environmental cre-

Be

"We have found that our carbon tax is entirely compatible with economic growth."

A SOMMELIER AVAILABLE 24/7 FOR ADVICE

PAGE 14 BUSINESS WITH DEUTSCHE

International

THURSDAY, SEPTEMBER 10, 2009

Carbon tax: Will it gain momentum in Europe?

BRUSSELS

With modest progress in reducing emissions, levy is back on agenda

BY JAMES KANTER AND MATTHEW SALTSMARSH

Economists have long seen a carbon tax as a good idea because of its simplicity. Politicians pay at a level that is set by the market.

But the idea never caught on widely in the United States or Europe, where governments jealously guard their autonomous markets. Instead, systems called cap and trade, which they helped to profit from, have taken hold.

Now, with only modest progress so far in meeting goals set for greenhouse gas reduction, the carbon tax may be making a comeback.

The French president, Nicolas Sarkozy, was to travel today to the east of driving a car or heading the east and thus reducing France's overall burden on the nation's environmental cre-

"We have found that our carbon tax is entirely compatible with economic growth."

Hubble promises a final blaze of glory

The Hubble Space Telescope is ending its life triumphantly, after the final upgrade to the orbiting observatory was declared a success with the firing of a final burst of light. The telescope's mission was to observe the universe in the most detailed way possible, and it has done so for over 30 years. The final image shows a bright, colorful nebula, a sign of the telescope's final moments.

number of stories

Price-fixing as concrete goes class

Flat out on Facebook

Seven doctors and nurses have been suspended from duty for taking part in the latest internet of themselves lying in solitary places. Page 24

England's passport

next year's football World Cup final with a 5-1 win over Costa Rica. Frank Lampard and Wayne Rooney added another Scotland hat-trick to the Netherlands. Page 27

Major markets reached on rate of child mortality

Major markets reached on rate of child mortality



Homeless teenager, drug addict award-winner

Speech Dobbie interview pages 32-33

THE TIMES International

Newspaper of the Year

PM

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Cold will disappear from North Sea because of change and not just researchers claim. "Warmer temperatures away plankton. Pg

Iraqi 'dictator'

The Iraqi opposition leader Nouri al-Maliki, Minister of the Interior, has been accused of being a dictator. Pg

Freedom

Police in France have been accused of harassing journalists. Pg

War cri

Australian war crime court has sentenced a former Australian soldier to 15 years in prison. Pg

Berli

A Berlin court has ruled that a German company is liable for the deaths of Polish soldiers. Pg

Carbon tax: Will it gain momentum in Europe?

BRUSSELS

With modest progress in reducing emissions, levy is back on agenda

BY JAMES KANTER AND MATTHEW SALTMAKIN

It seems like we've been hearing about a carbon tax for as long as I can remember. It's a good idea because of its simplicity: tax carbon at a level that is set by the market.

But the idea never caught on widely in the United States or Europe, where governments are so reluctant to raise taxes. Industries lobbied for a market-based system called cap and trade, which they helped to design and from which some have profited handsomely.

Now, with only modest progress so far in meeting goals set for greenhouse gas reduction, the carbon tax may be making a comeback.

The French president, Nicolas Sarkozy, was to unveil details Thursday of a carbon tax that would ease the cost of driving a car or heating a home, while also encouraging conservation.

Mr Sarkozy would also unveil his nation's environmental cre-

"We have found that our carbon tax is entirely compatible with economic growth."

Hubble promises a

final blaze of glory

The Hubble Space Telescope is ending its life triumphantly, after the final upgrade to the orbiting observatory was completed. The successful upgrade suggests that Hubble's last five years promise to be its best, yielding unprecedented insights into the Universe. Page 20 Hubble "white elephant", page 4

number of readers reached

Flat out on Facebook

Seven doctors and nurses have been suspended from duty for taking part in the latest internet quiz, where participants post Facebook images

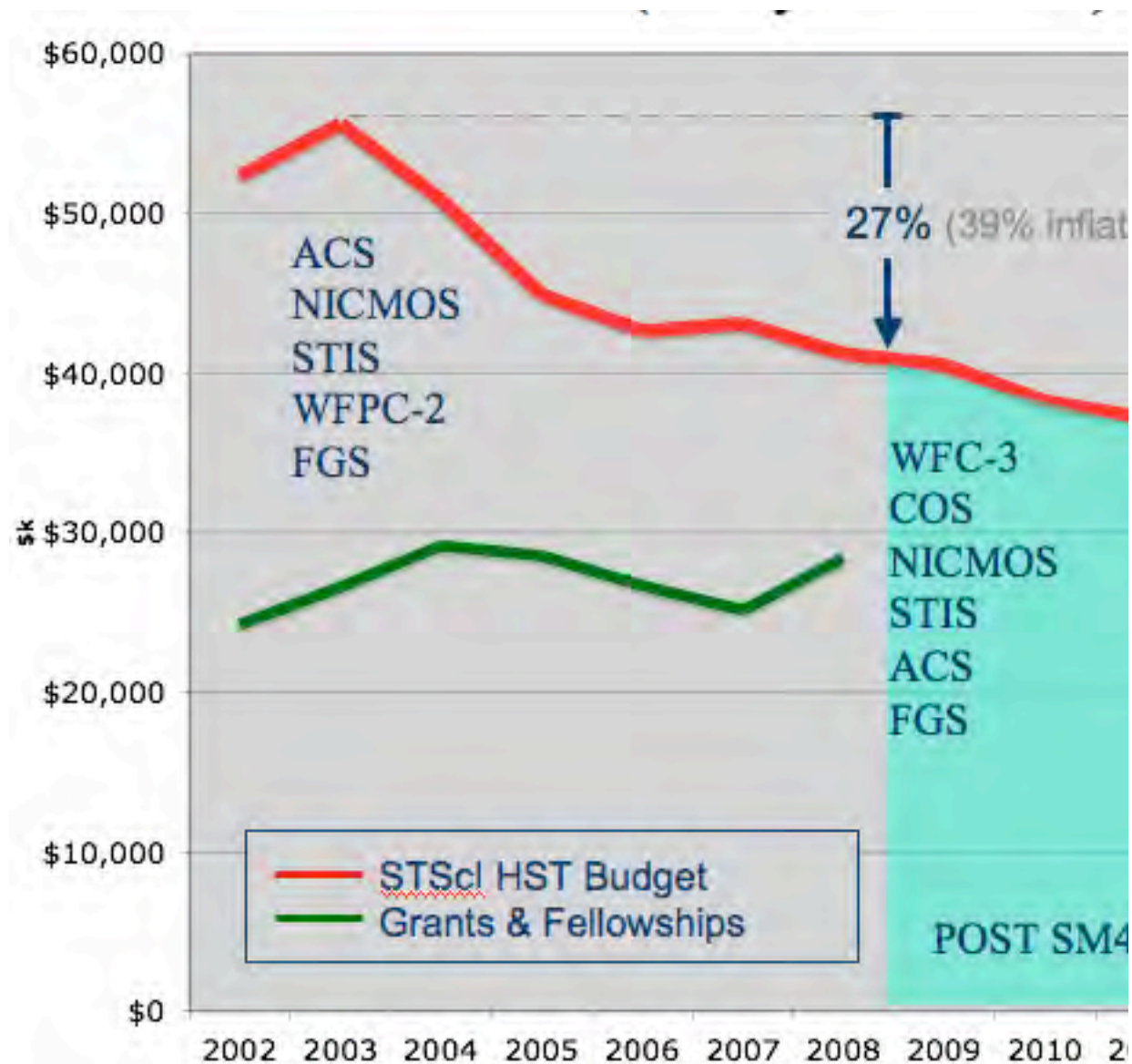
Major marker is reached on rate of child mortality

MDTA, MALAYSIA

STScI budget evolution

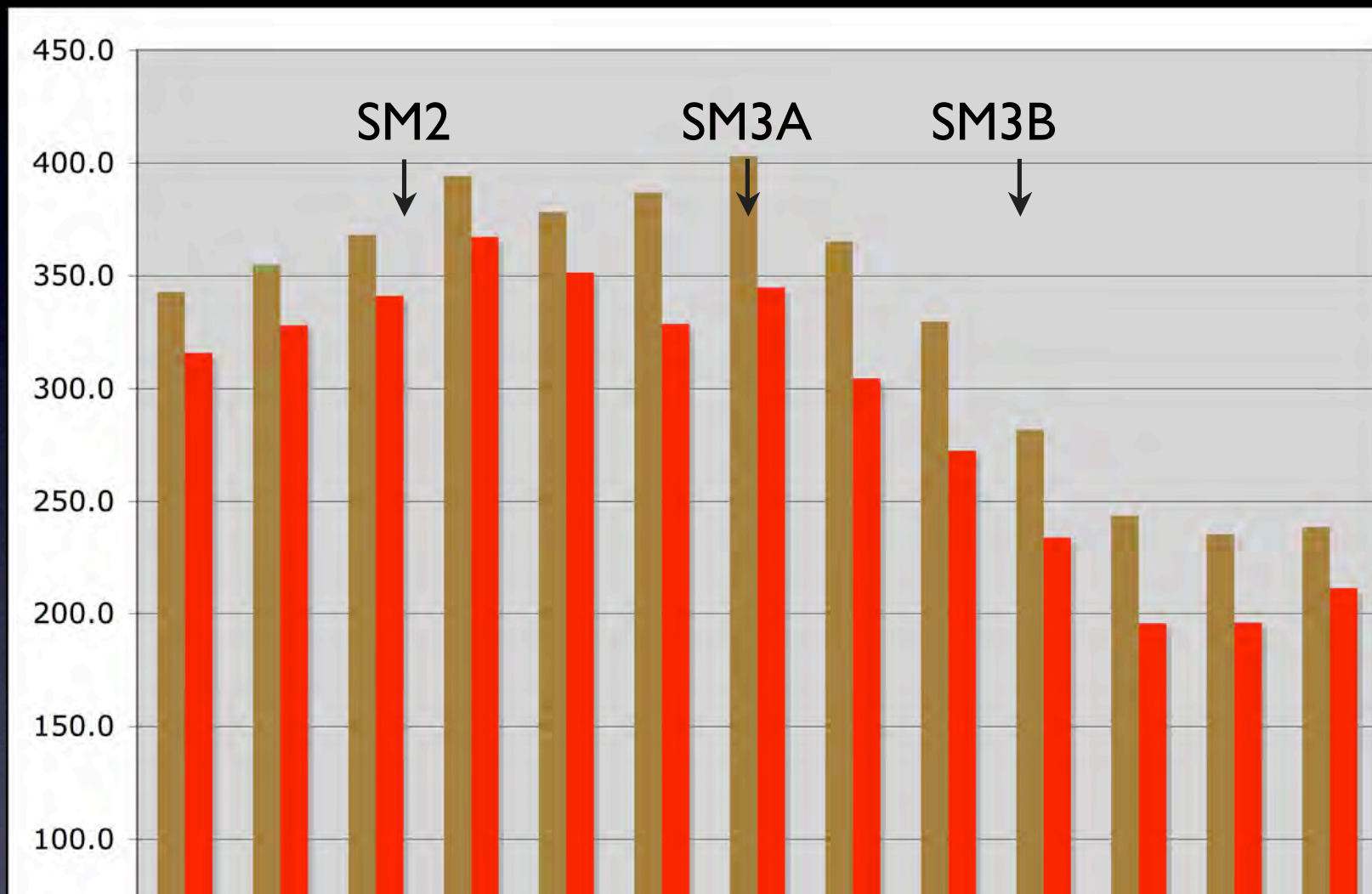


get
TScI



Efficiency improvements

process
resource
result



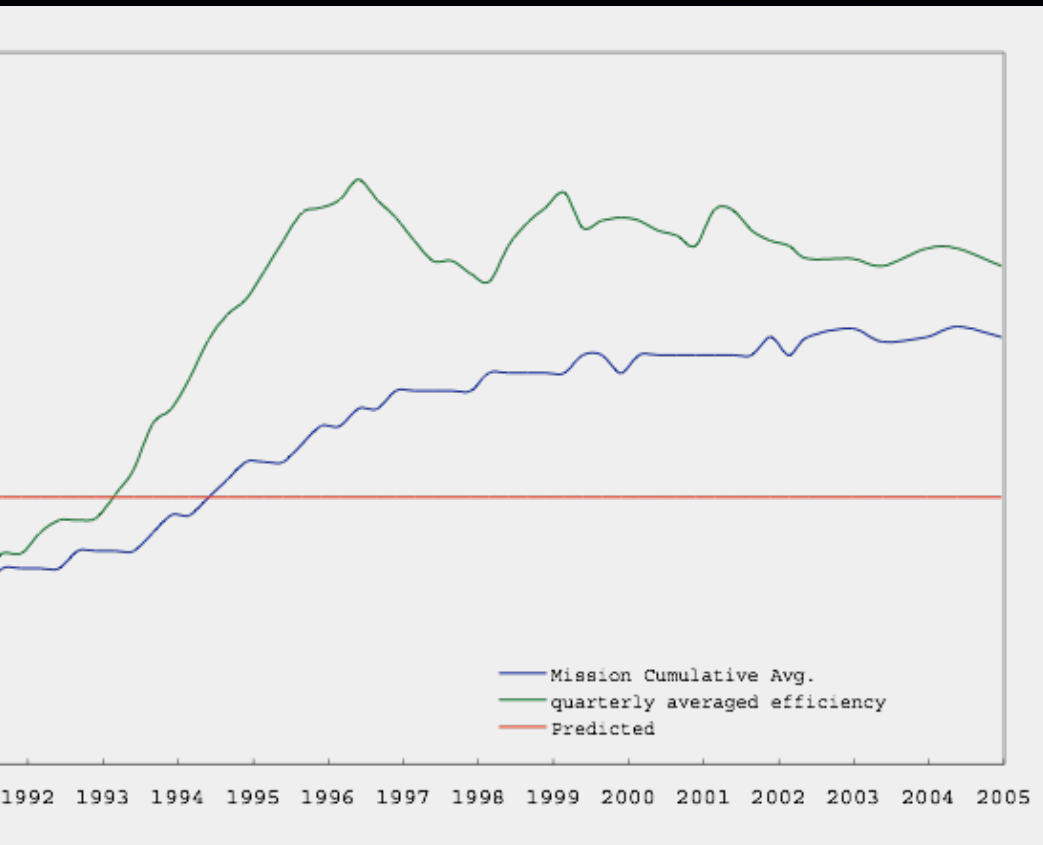
Performance metrics: refereed publications

process
resources
results

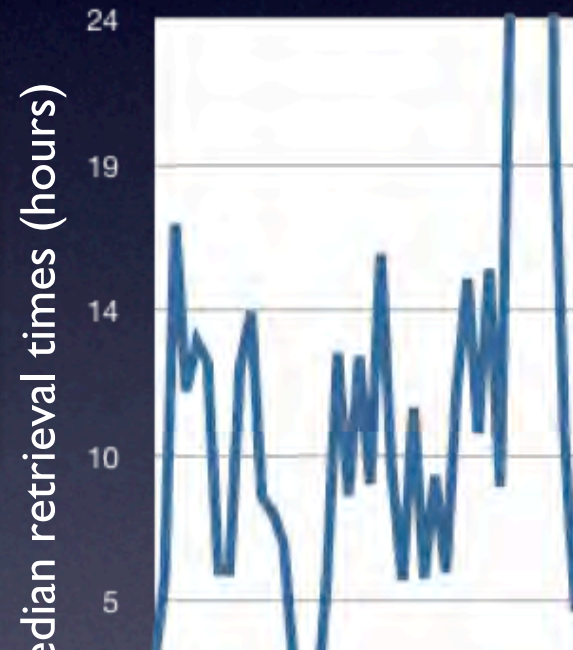


Efficiency & improvements

process
resources
results



spacecraft on target efficiency



process improvements

process
resources
results

Proposal Preparation and submission:

improved user tools

improved documentation

dedicated budget for observing proposal until accepted

Processing:

improved user tools (fewer problem submissions)

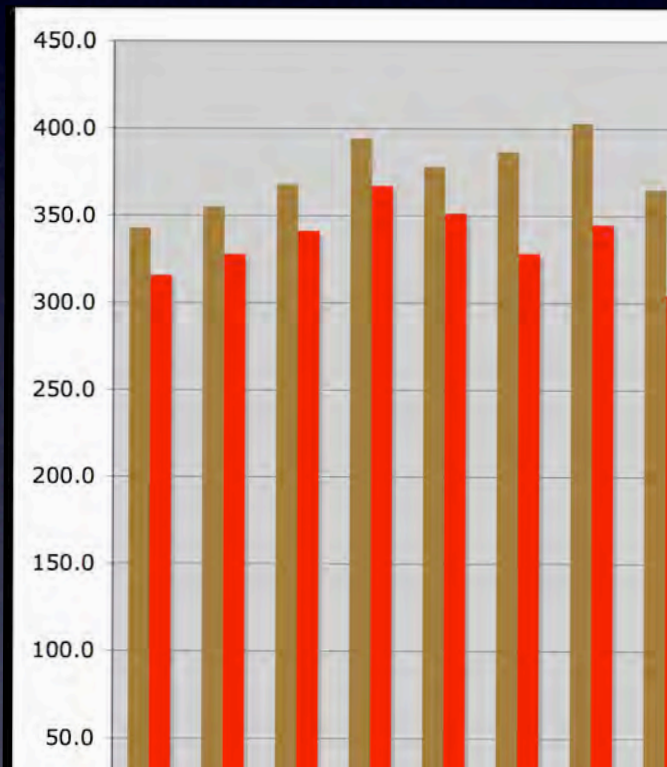
streamlined processing & automation

streamlined conflict/duplication rules & tools

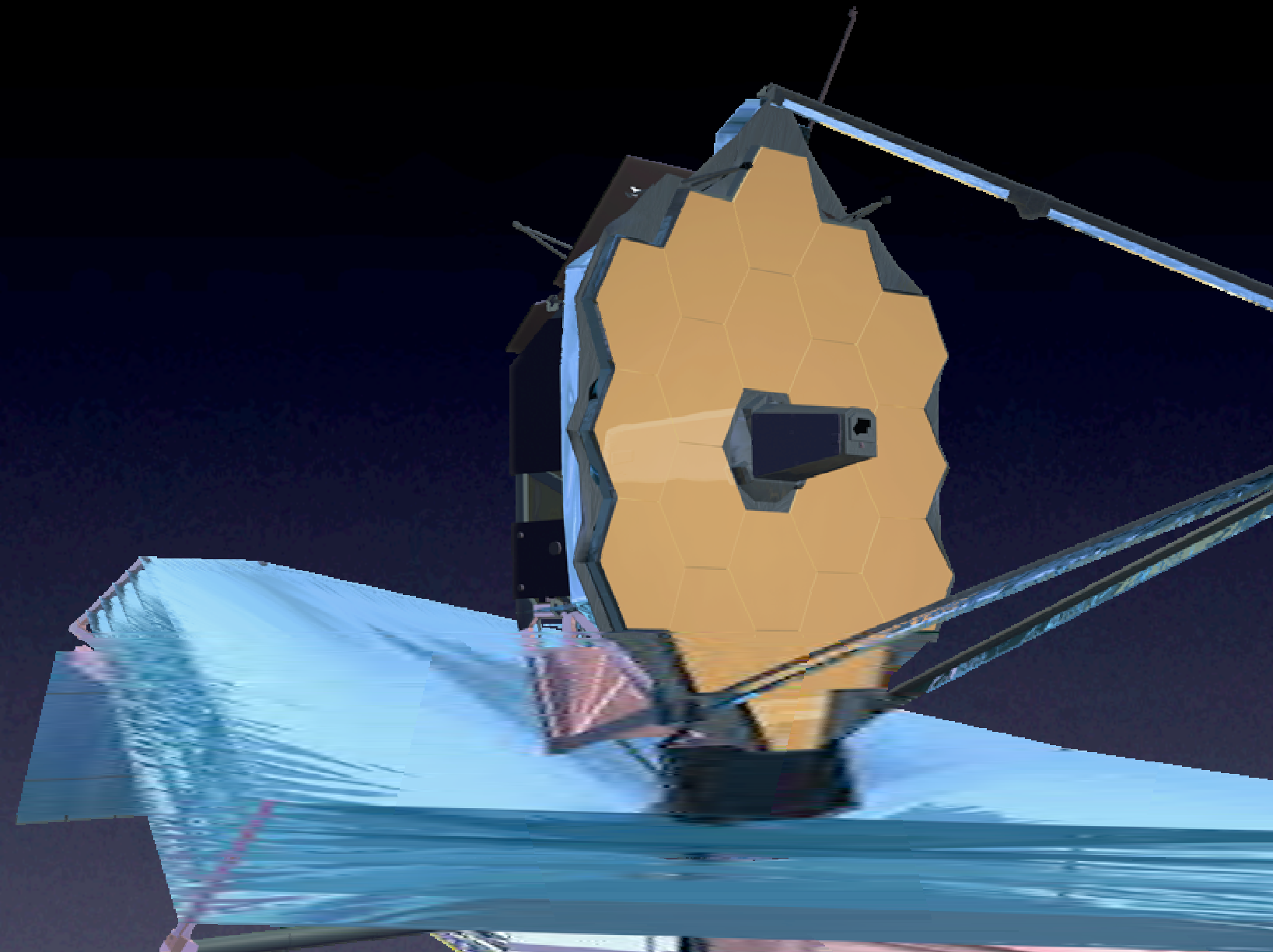
streamlined change request processing

Monitoring & Scheduling:

improved operational tools & automation



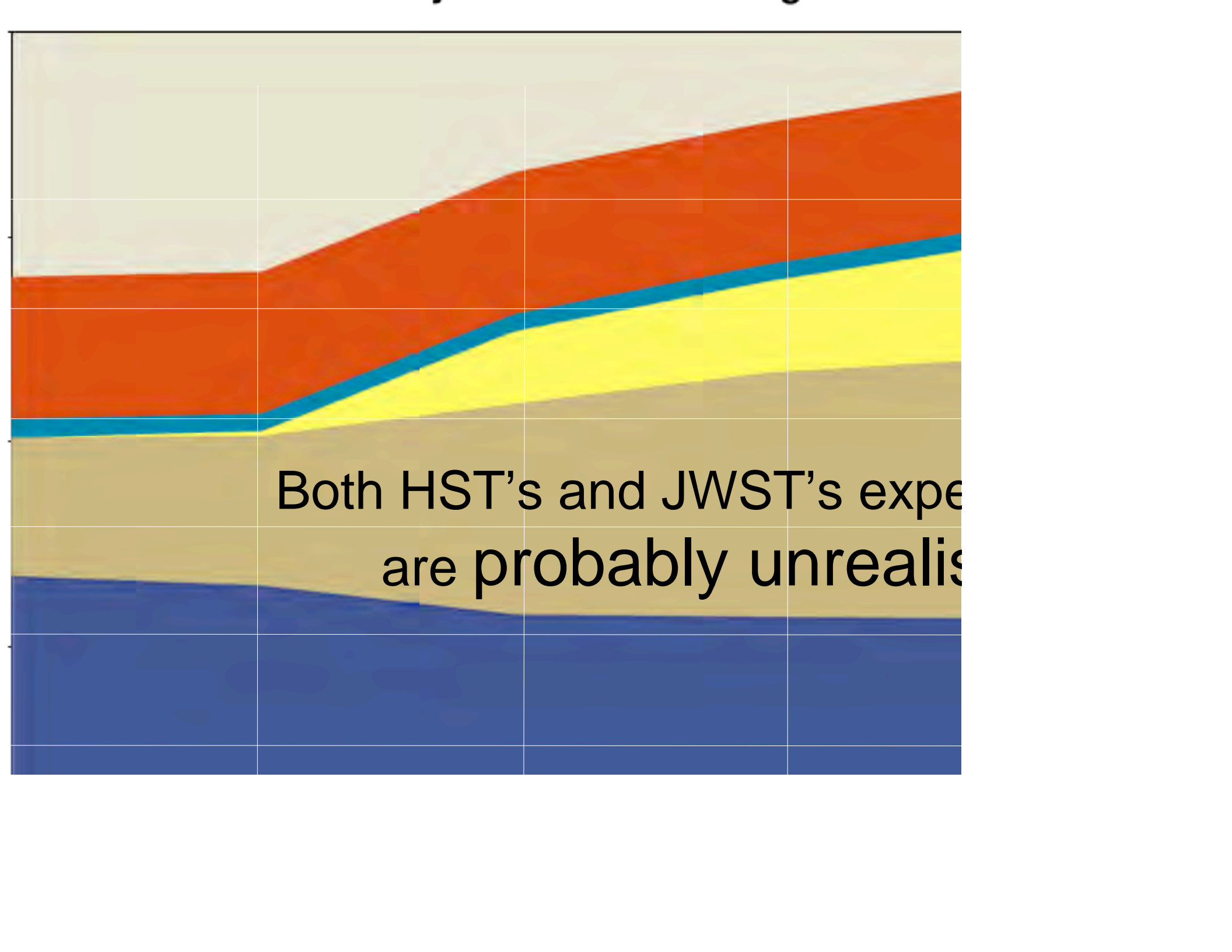
James Webb Space Telescope



ce Telescope

IM Structure at GSFC





Both HST's and JWST's expected lifetimes
are probably unrealistic

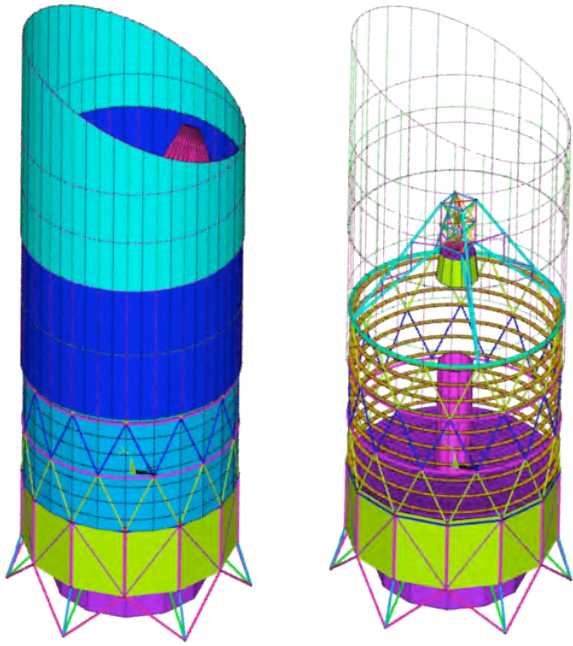
President's FY 2010 Budget Request Detail

Budget Authority, \$ in million

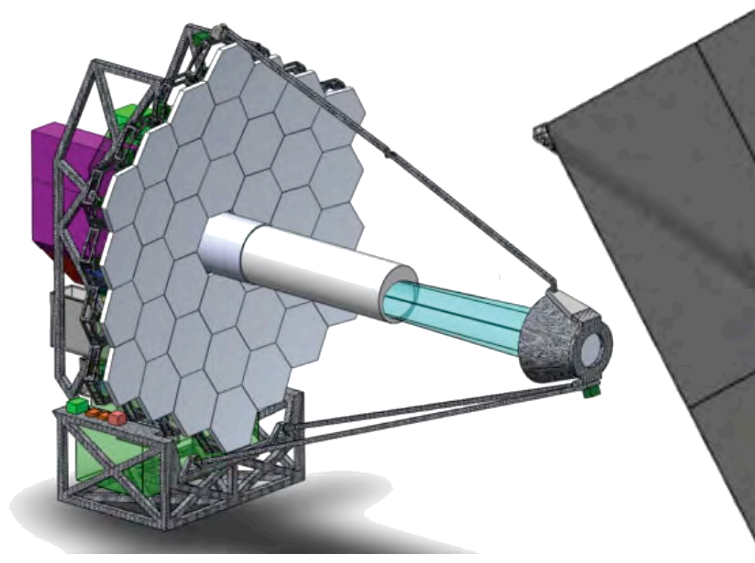
by Appropriation Account

By Theme

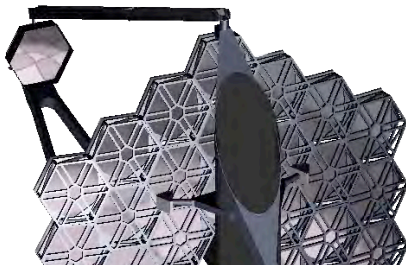
	FY 2008 Actuals	FY 2009** Enacted	FY 2010	FY 2011	FY
Astrophysics	1,395.6	1,281.2	1,120.9	1,074.1	1,074.1
<i>Astrophysics Research</i>	<u>102.2</u>	<u>135.0</u>	<u>151.9</u>	<u>160.0</u>	
Astrophysics Research and Analysis	56.9	60.0	61.1	62.5	
Balloon Project	24.0	24.6	26.7	28.8	
Other Missions and Data Analysis	21.3	50.4	64.1	68.6	
<i>Cosmic Origins</i>	<u>870.1</u>	<u>819.2</u>	<u>667.2</u>	<u>598.9</u>	
Hubble Space Telescope (HST)	244.9	207.7	112.6	101.6	
James Webb Space Telescope (JWST)	510.3	446.9	441.4	385.1	
Stratospheric Observatory for Infrared Astronomy (SOFIA)	63.8	72.8	72.8	74.0	



8-m Monolithic Primary
(shown with on-axis SM configuration)

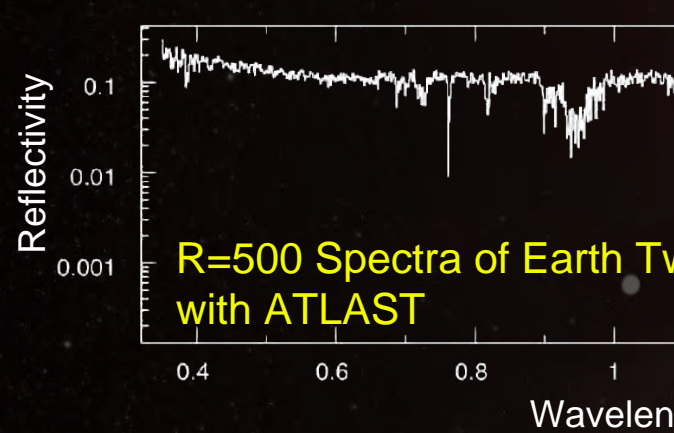
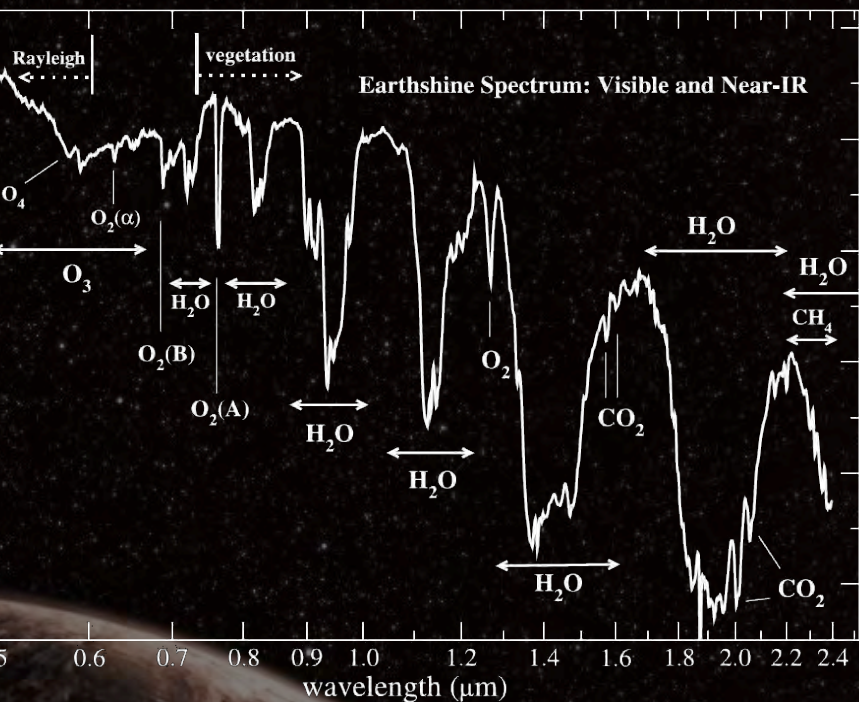


9.2-m Segmented
36 1.3-m hexagonal

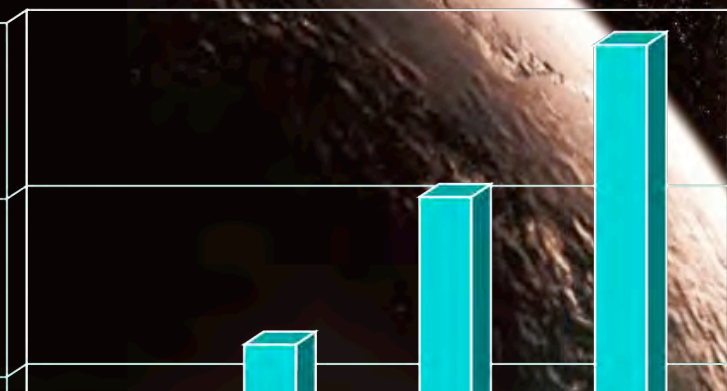


16.8-m Segmented Telescope
36 2.4-m hexagonal mirror segments





The signature of life is encoded in the spectrum of the Earth



HST



JWST

An Earth-twin at a distance of 2
faintest galaxy in Hubble's
A large space telescope is

Top many astrophysics/research

Star formation & evolution; resolved stellar populations

Galaxy formation & evolution; supermassive black hole evolution

Formation of structure in the universe; dark matter kinematics

Origin and nature of objects in the outer



A “life finder” telescope
be a multi-billion
support by a broad