

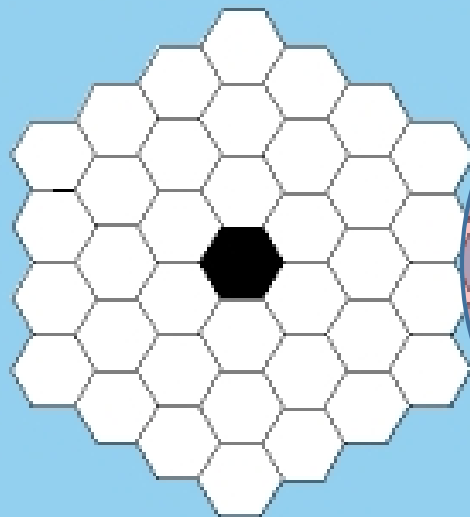
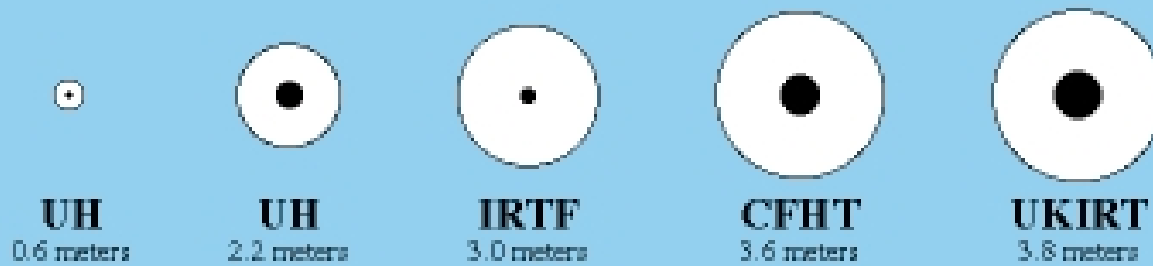
# LBT2020

<http://lbto2014um.weebly.com/lbt2020.html>

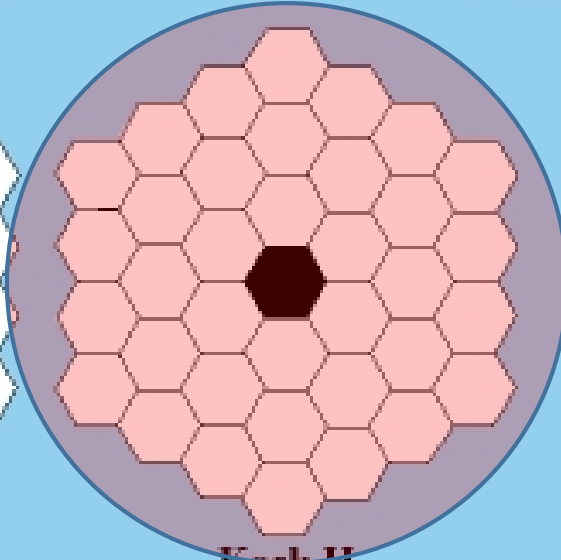


## LBT2020

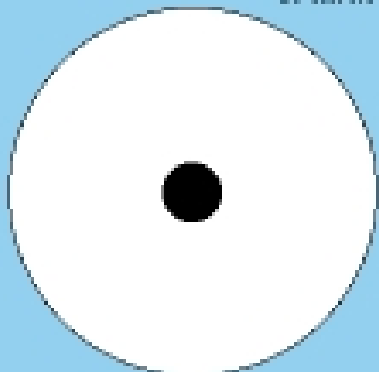
A six-year development plan for LBTO [2014-2019]



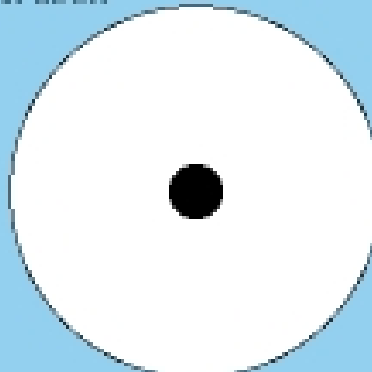
**Keck I**  
10 meters



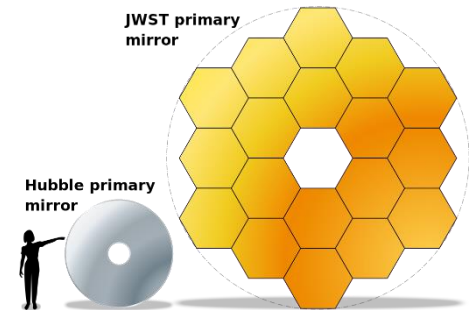
**Keck II**  
10 meters



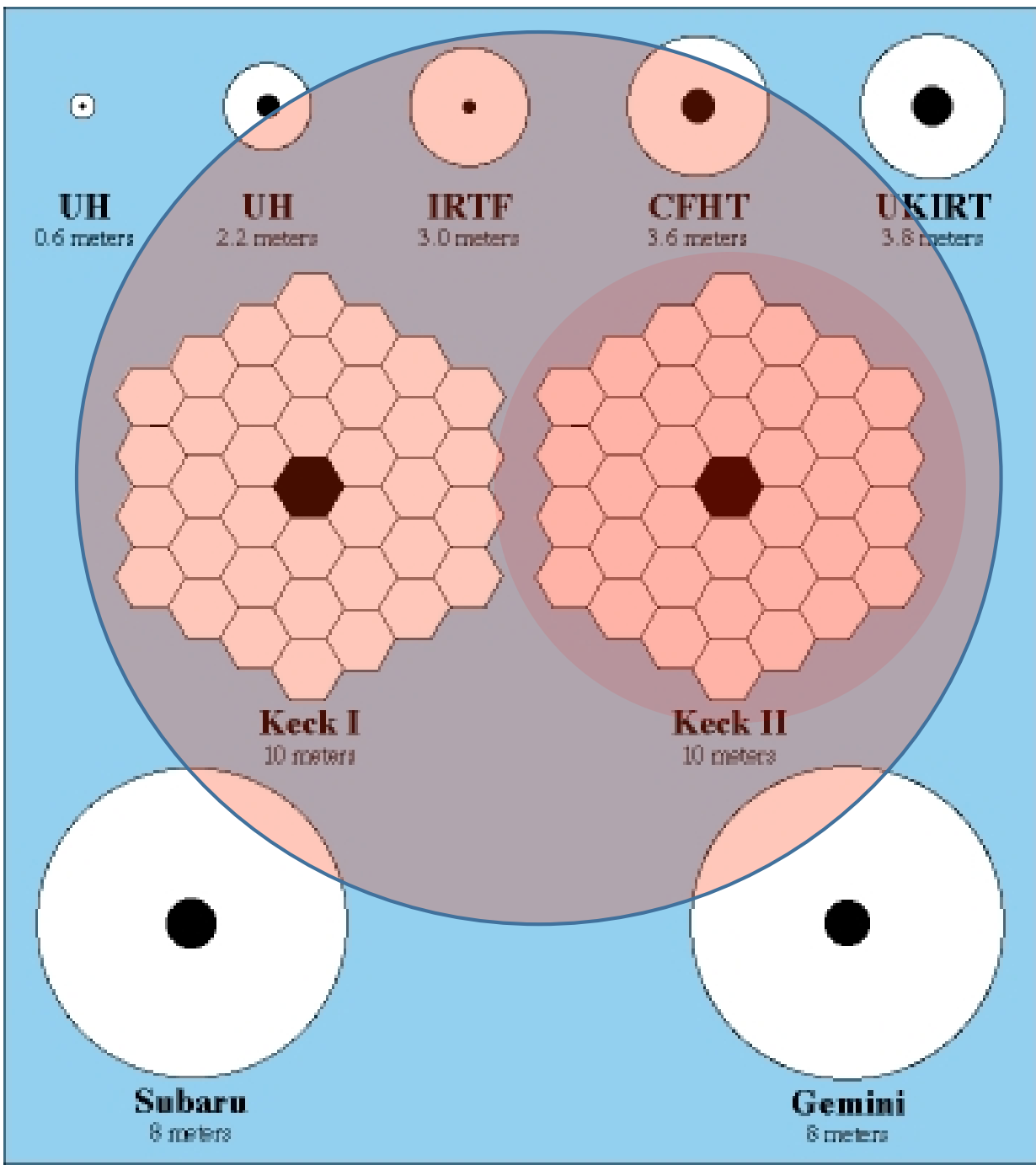
**Subaru**  
8 meters



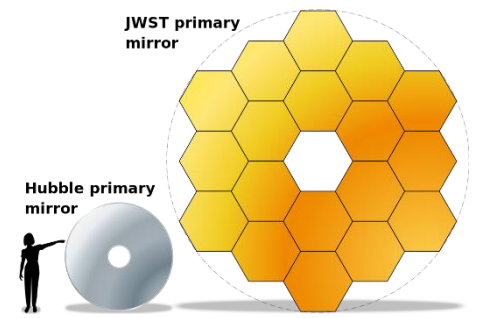
**Gemini**  
8 meters



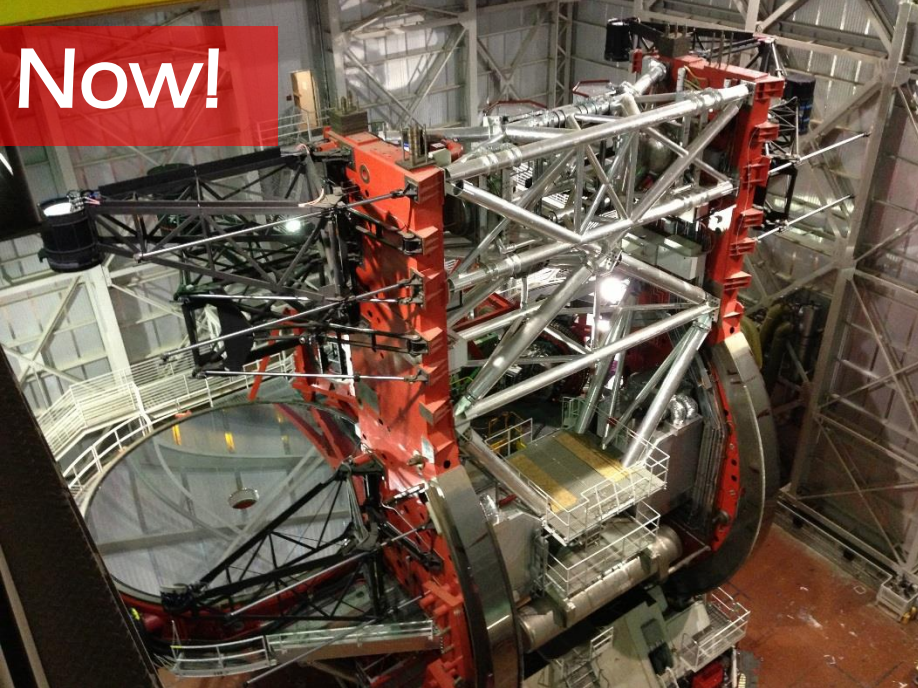
**LBTO**  
11.8 meters  
Light  
Gathering  
Power



**LBTO**  
**23 meters**  
**Resolving**  
**Power**



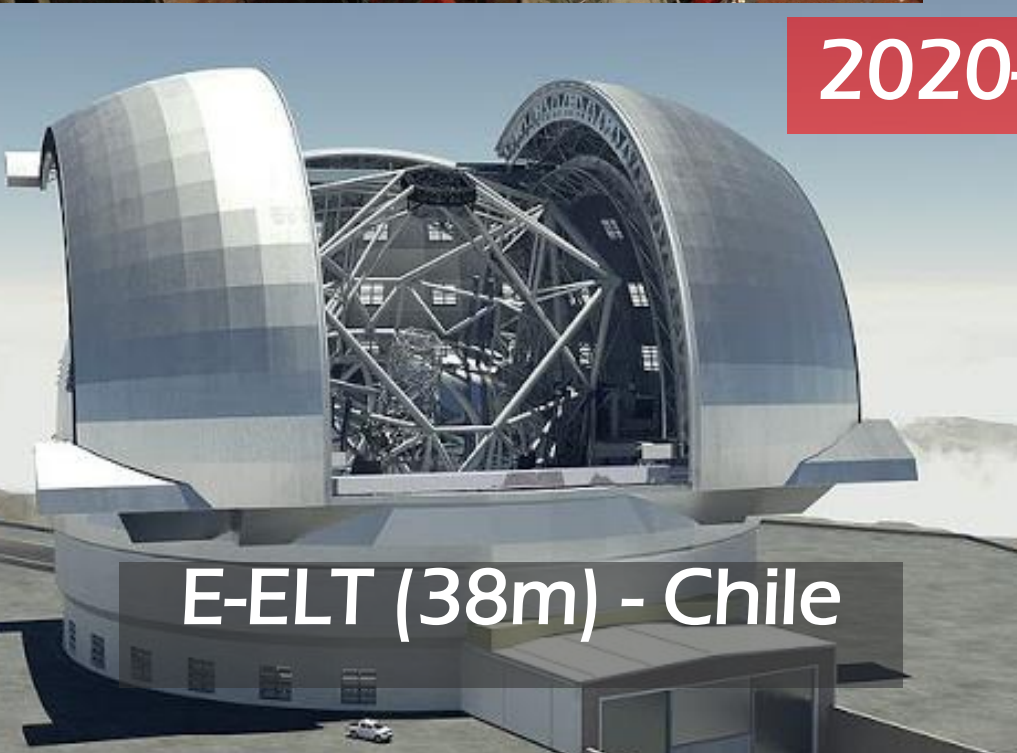




Now!

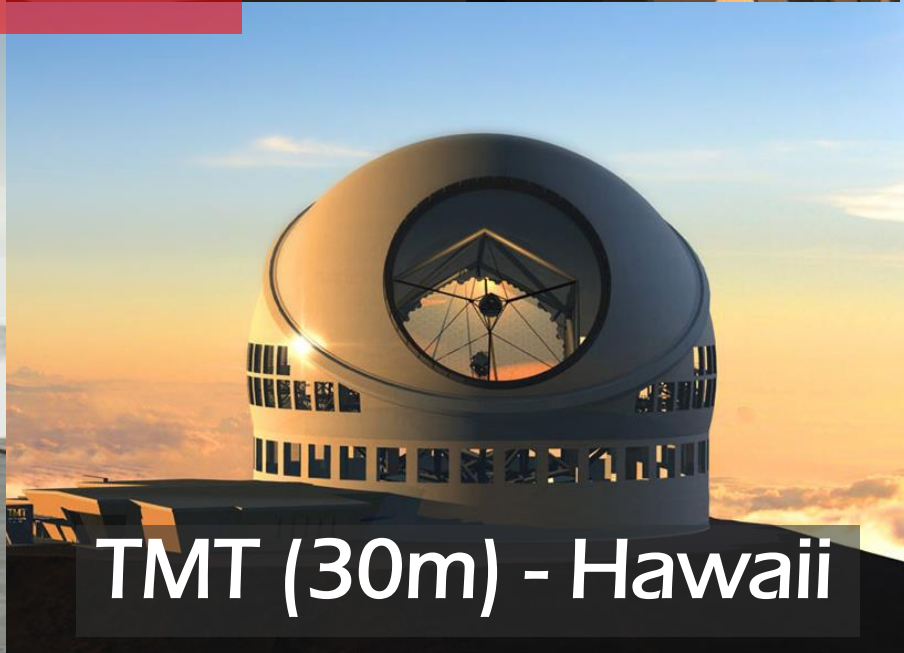


GMT (24.5) – Chile

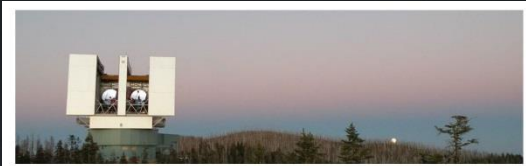


2020-2030

E-ELT (38m) - Chile



TMT (30m) - Hawaii

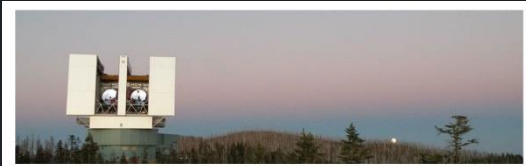


## LBT2020

A six-year development plan for LBT [2014-2019]

"As the forerunner of the ELTs and one of the leading 8-m class telescopes, LBT must offer, as efficiently as possible, state-of-the art instruments delivering high-quality data to the users of the observatory, thus enabling excellent science at the forefront of astronomy"





## LBT2020

A six-year development plan for LBT0 [2014-2019]

"As the forerunner of the ELTs and one of the leading 8-m class telescopes, LBT0 must offer, as efficiently as possible, state-of-the art instruments delivering high-quality data to the users of the observatory, thus enabling excellent science at the forefront of astronomy"

# Enabling more science





# Enabling more science

- Better data
  - IQ – mirror ventilation – collimation - ...





# Enabling more science

- Better data
  - IQ – mirror ventilation – collimation - ...
- More data
  - Less downtime, less overheads, better observers, binocular...



# Efficiency... (13B)

## 2013 B - Downtime Sources





# Enabling more science

- Better data
  - IQ – mirror ventilation – collimation - ...
- More data
  - Less downtime, less overheads, better observers, binocular...
- Pre-processed data, public quickly
  - Pipelines - Proprietary time – Public archive

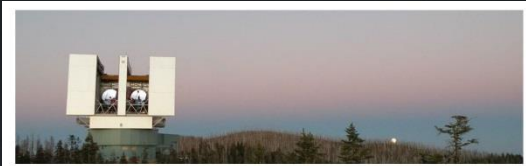




# Enabling more science

- Better data
  - IQ – mirror ventilation – collimation - ...
- More data
  - Less downtime, less overheads, better observers, binocular...
- Pre-processed data, public quickly
  - Pipelines - Proprietary time – Public archive
- Observatory-run queue
  - Better data – High priority programs completed first – Programs selected according to conditions – +...





## LBT2020

A six-year development plan for LBT [2014-2019]

"As the forerunner of the ELTs and one of the leading 8-m class telescopes, LBT must offer, as efficiently as possible, state-of-the art instruments delivering high-quality data to the users of the observatory, thus enabling excellent science at the forefront of astronomy"



# Strengths of LBTO



Excellent AO...

- We must build on it!

1. AO instruments  
LUCIs... asap!

?

2. Going down to shorter wavelengths

?



# Strengths of LBTO

Excellent AO...



- We must build on it!

1. AO instruments

LUCIs... asap!

?

## Proposals for upgrades and new instruments

2. Going down to shorter wavelengths

?

# Strengths of LBTO



ELT forerunner!

Interferometry is key...

- LBTI
  - Going down to near-IR and visible?
- LINC-NIRVANA
  - Get the full LN!





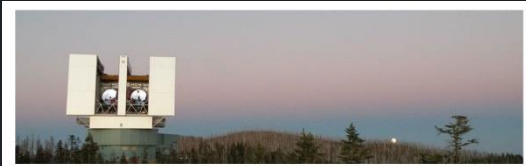
# Strengths of LBT0

ELT forerunner!

Interferometry is key...

- LBTI
    - Going down to near-IR and visible?
  - LINC-NIRVANA
    - Get the full ELT
- Challenge:**
- Routine operation...**





## LBT2020

A six-year development plan for LBTO [2014-2019]

"As the forerunner of the ELTs and one of the leading 8-m class telescopes, LBTO must offer, as efficiently as possible, state-of-the art instruments delivering high-quality data to the users of the observatory, thus enabling excellent science at the forefront of astronomy"

12



8

4

1950

1970

year built

1990

2010

Hale

Nicholas U. Mayall

BTA-6

Anglo Australian

MMT

Victor M. Blanco

William Herschel

New Technology

Keck 1 &amp; 2

Magellan 1&amp;2

AEOS

Galileo Nazionale

Large Binocular

Subaru

VLT

Gemini S.

Gemini N.

MMT

Large Zenith

LAMOST

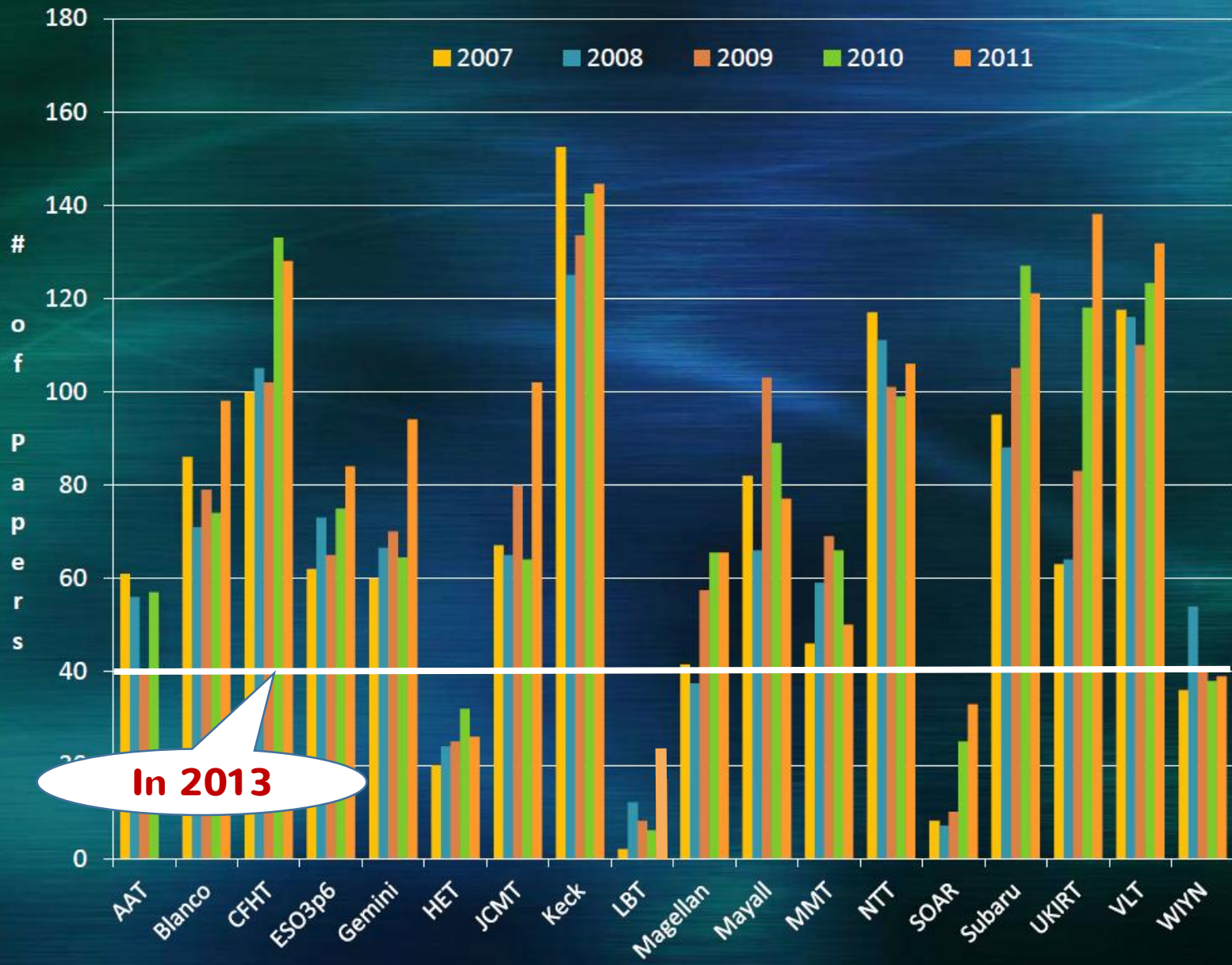
VISTA

Discovery Channel

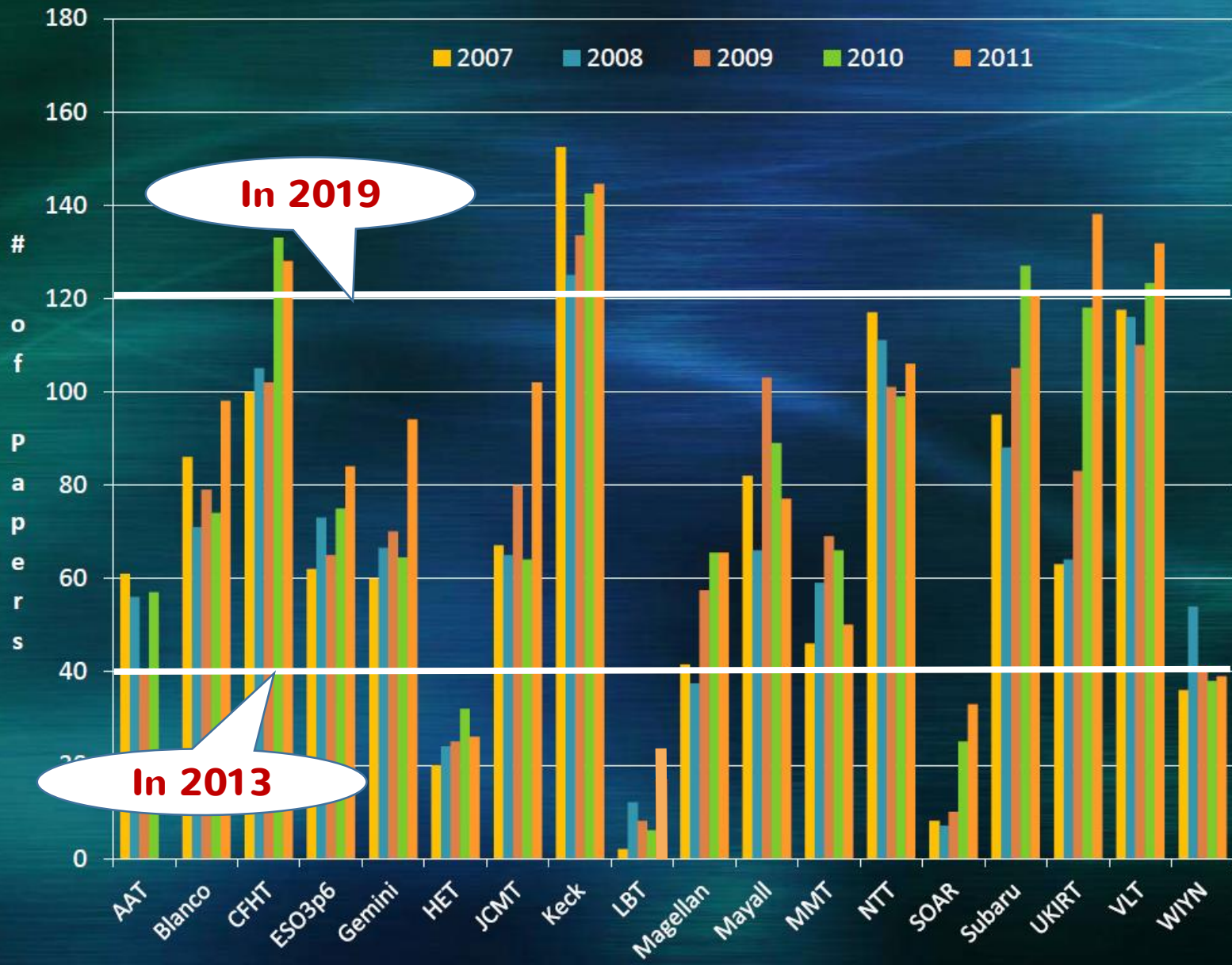
SOAR

Gran Canarias

SALT







# A few things we have to live with...



## Mt Graham is not Mauna Kea or Chile

- Good seeing not so frequent
- More nights lost to weather



**A few things  
we have to live with...**



**Mt Graham is not Mauna Kea or Chile**

- Good seeing not so frequent
  - More nights lost to weather
- We must be ready to make the  
best of the best conditions...**
- Don't let luck decide!**

A few things  
we have to live with...

Observatory on Mt Graham has limited  
space for offices, lodging, auxiliary  
equipment...



**LBT2020**

A six-year development plan for LBTO [2014-2019]



# A few things we have to live with...

## Observatory on Mt Graham has limited space for offices, lodging, auxiliary equipment...

- Remote observing room in Tucson
  - Increased bandwidth?
- Is it worth building close to the site?
  - Future of the permit...



**LBT2020**

A six-year development plan for LBT0 [2014-2019]

# A few things we have to live with...

## Observatory on Mt Graham has limited space for offices and lodging



**LBT2020**

A six-year development plan for LBT0 [2014-2019]

- Remote observing room in Tucson
  - Increased bandwidth?
- Is it worth building close to the site?



**Now!**

**GMT (24.5) – Chile**

**We have a time window to shine  
(can be longer than they claim)  
Let us make sure we don't miss it!**

**E-ELT (38m) - Chile**

**TMT (30m) - Hawaii**



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**2020-2030**

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