



GIFT WORKSHOP- 2016

THE SOLAR SYSTEM AND BEYOND

Vienna, Austria, 17-20 April 2016

The oldest traces of astronomical studies come from Mesopotamia, some 5000 years ago, where observation of the sky led to the establishment of a very precise calendar.

The mesopotamian astronomers grouped the stars of the Zodiac into 12 constellations. They also recognized that the « Morning Star » and the « Evening Star » were actually the same celestial body (Venus) and used a mathematical system with a base of 60, which has later been used for dividing the hour into 60 minutes and each minute into 60 seconds...

Most of the remains have been destroyed, and we know about this from scattered evidences.



First known complete alphabet at Ugarit (Syria) 14 th century BC



Venus Tablet (Enûma Anu Enlil)

*Giving the rising and dawings of Venus over 21 years
(850 to 650 BC, first version 1646-1626 BC)*

First text establishing a periodic astral movement

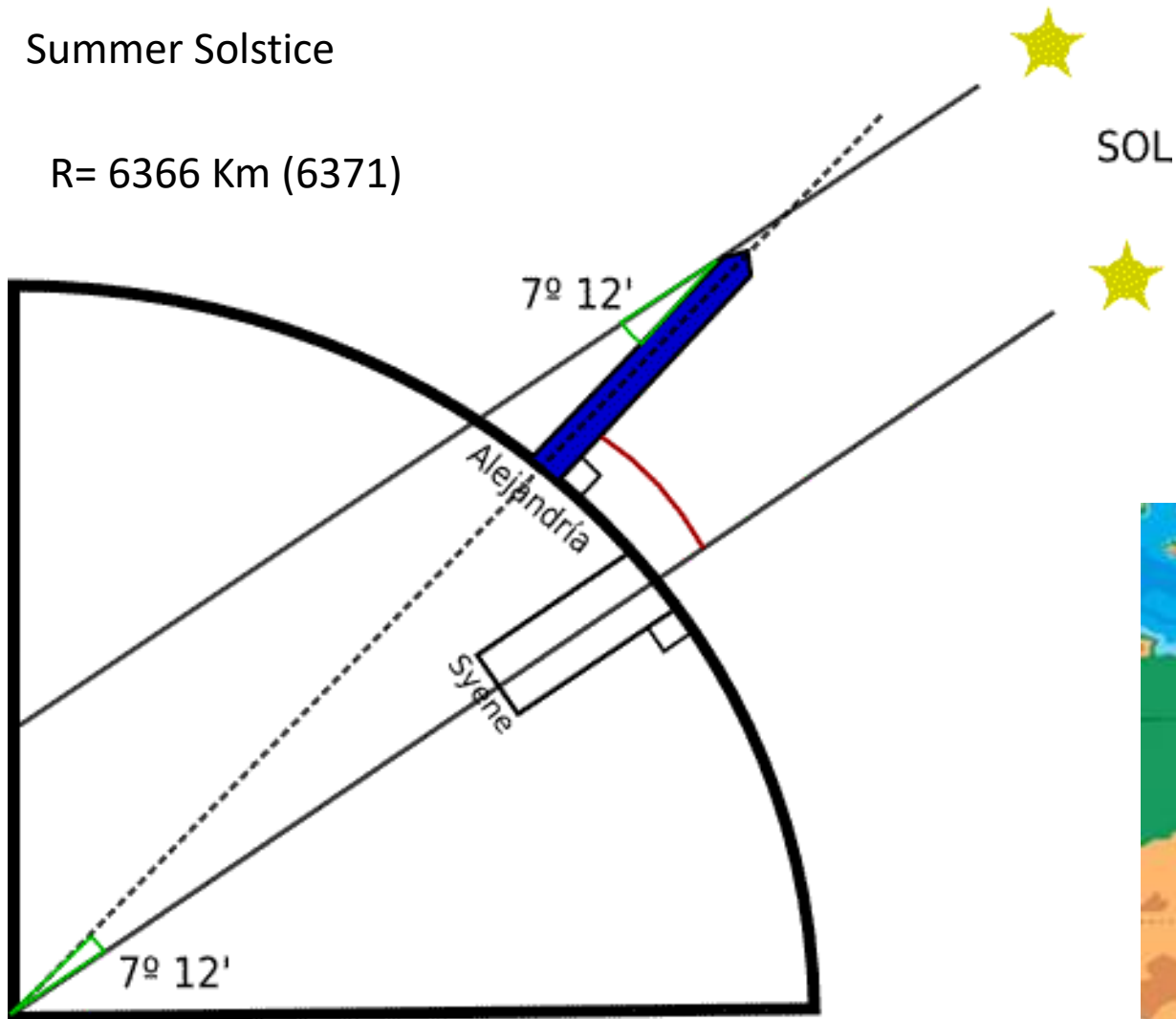
Το $\Sigma \mathbb{N} \times \mathbb{N} \rightarrow \mathbb{N} \times \mathbb{N}$:

Αριστοτελες, Ερατοστενεις, Αρισταρχος,
(αλες \square

Eratosthenes (Cyrene, 276 BC- Alexandria, 194 BC)

Summer Solstice

$R = 6366 \text{ Km}$ (6371)



About a thousand years later, on
the other side of the Atlantic
Ocean....







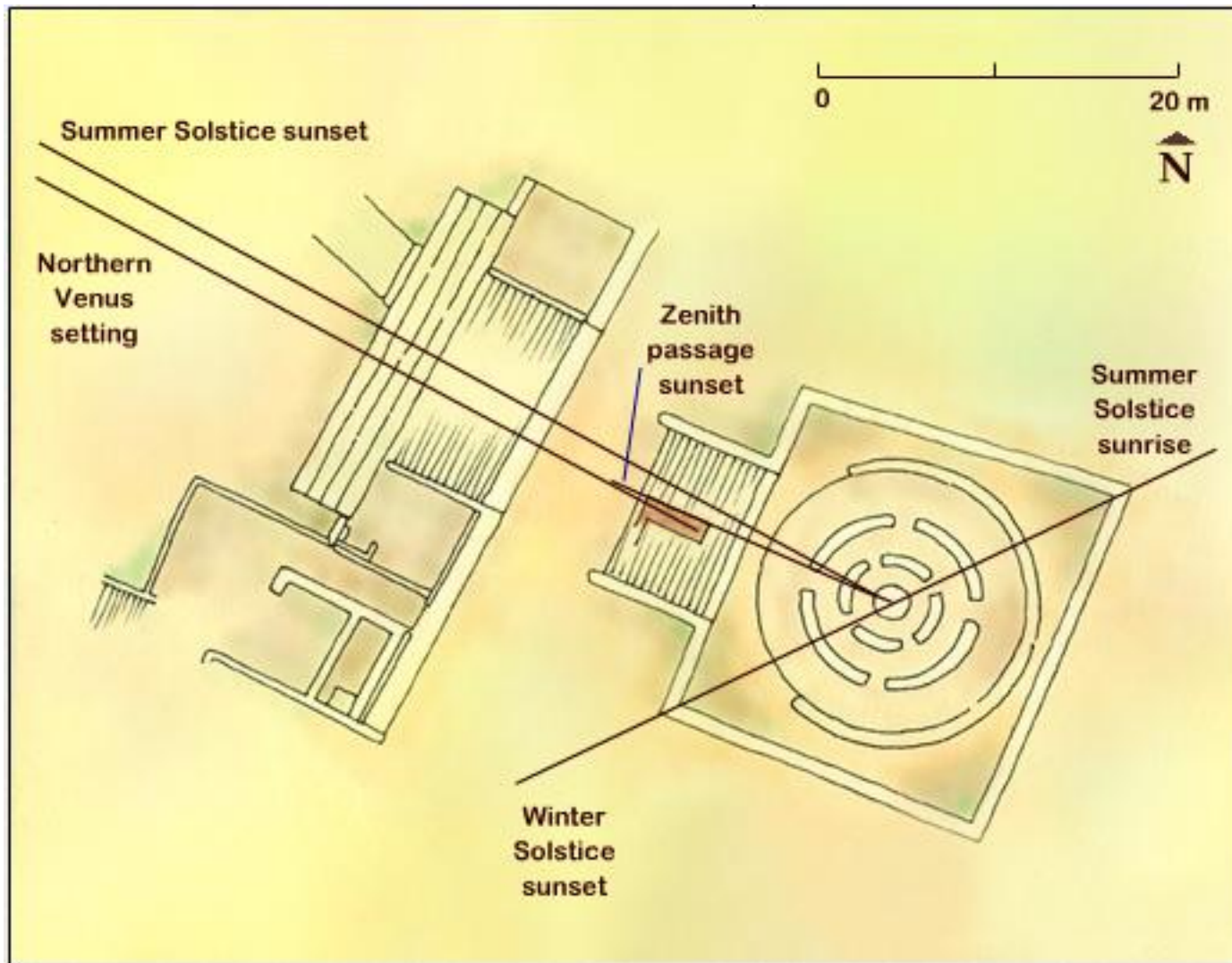
Dzibilchaltun







El Caracol: windows alignment



Back to Europe: the take off of astronomy!

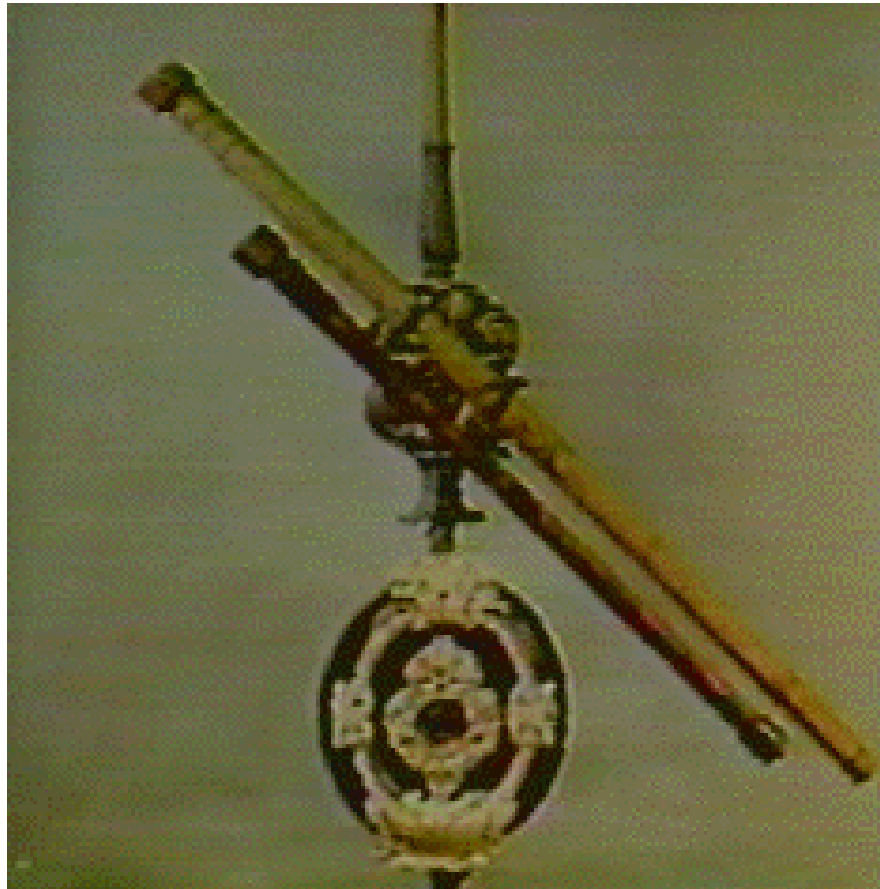
Copernicus, Tycho Brahe, Kepler, Galileo...

A fundamental date for astronomy!

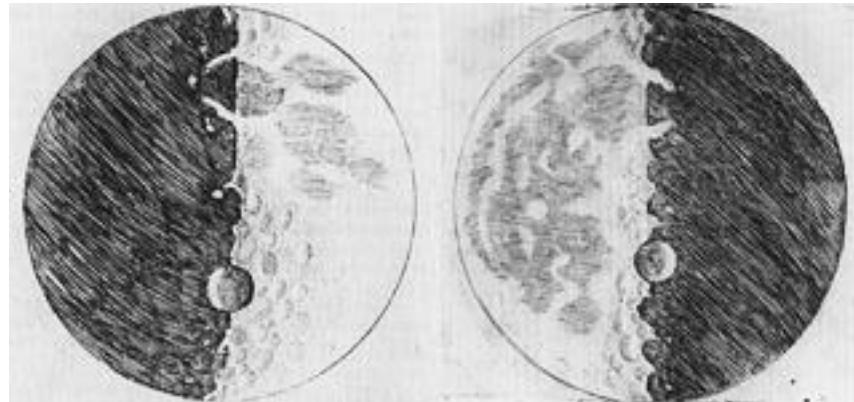
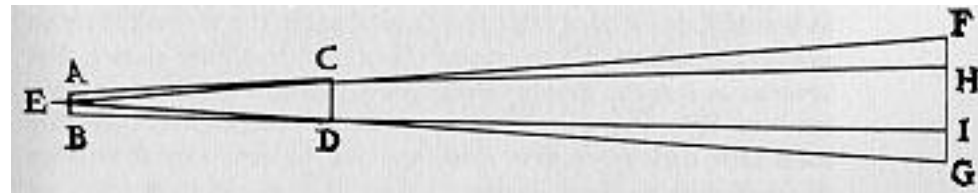
August 21, 1609

Galileo presents his telescope!

Certainly inspired on previous work of Hans Lippershey



A copy of Galileo's telescope (Museo delle Scienze, Firenze)



Galileo's drawings of phases of the Moon.

Johannes Kepler

This afternoon, you'll explore Kepler's second law on planetary orbits, that was published in 1609, when he could not have accessed to the telescope...

Think that he only had his eyes....

A second fundamental date for Astronomy:

April 24, 1990

Hubble

The NASA/ESA spatial telescope is placed on orbit!



Almost 3000 years between the mesopotamian astronomers and
Galileo....

.....Only 380 year and 9 months between Galileo's telescope and
Hubble!

And this fabulous adventure goes on!

And in this GIFT workshop we will
try to make you participate to it!

Monday April 18, 2016

Chairperson: Carlo Laj

**08:45 - 09:15 INTRODUCTION TO
THE 2016 GIFT WORKSHOP**

Carlo Laj

EGU Committee on Education

**9:15 – 10:00: INTRODUCTION TO
THE SOLAR SYSTEM**

Özgür Karatekin

Royal Observatory of Belgium

10:00 – 10:30 COFFEE BREAK

Chairperson: Annegret Schwarz

10:30 – 11:15 THE SUN

Paal Brekke

Norwegian Space Center

**11:15 – 12:00 IMPACT CRATERS ON
EARTH AND IN THE SOLAR SYSTEM**

Christian Koeberl

Vienna Museum of Natural

Sciences & University of Vienna

Tuesday April 19, 2016

Chairperson: Stephen Macko

**08:30 - 09:15 FROM MOON SEISMOLOGY
TO MARS WITH THE SEIS INSTRUMENT ON
THE NASA INSIGHT MISSION**

Philippe Lognonné

Institut de Physique du Globe, Paris, France

**09:15 – 10:00 A PATH TO THE DETECTION
OF EARTH-TYPE PLANETS**

Michel Mayor

University of Geneva , Switzerland

10:00 – 10:30 COFFEE BREAK

Chairperson: Friedrich Barnikel

**10:30 – 11:15 THE SEARCH FOR HABITABLE
WORLDS IN THE OUTER SOLAR SYSTEM**

Athena Coustenis

LESIA, Observatoire Paris-Meudon, France

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Wednesday April 20, 2016

09:30 – 10:45 THE “JUICE” MISSION

Olivier Witasse

European Space Agency, ESTEC

Noordwijk, the Netherlands

11:00 - 12:00 THE ROSETTA MISSION

Matt Taylor

European Space Agency, ESTEC,

Noordwijk, the Netherlands

Monday April 18, 2016

**14:00 -14:15 ONE YEAR AFTER THE GIFT
WORKSHOP**

Video by Anna Merlini
'Il Geco' Found

14:15 – 14:25 PLANET EARTH

Barbara Ferreira
EGU Media Officer

14:30 – end of the day:

DAY HANDS -ON ACTIVITIES

Sophie Allan and Andrew McMurray
National Space Academy, Leicester, UK
&
Diane Carrer
Mountain High School, Valdebore,
France

Monday April 18, 2016

THE NORTHERN LIGHTS (VIDEO)

Pal Brekke And Fredrik Broms
Norwegian Space Center

Tuesday April 19, 2016

13:30 – 15:30 NASA HYPERWALL

Presented by W. H. Humberson, M.
Freilich and S. Clarke
National Aeronautics and Space
Administration (NASA)

The GIFT workshop is sponsored not only by EGU, but also by several science organizations, which we gratefully acknowledge here:



The European Space Agency



Istituto Nazionale di Geofisica e Vulcanologia



William S. Goree Award



Westermann Verlag, Braunschweig, Germany



Géoazur laboratory and INSIGHT program



Many persons, not only from the Committee on Education of EGU, have given their time and energy to the preparation of this Workshop!

We all hope that you'll enjoy it and most of all that it will be useful in your teaching.

**But we also expect something from
you!**

We would like to continue to offer teachers the opportunity to attend GIFT and similar workshops, but **this depends upon us being able to show our sponsors that teachers have used the GIFT information and science didactics in their daily teaching**, or as inspiration for new ways to teach science in their schools.

Therefore we ask you:

Therefore, we ask you

1. To fill in the evaluation forms as soon as possible and email them back to us

EGU GIFT WORKSHOP
The Solar System and beyond
(Vienna, Austria, April 18-20, 2016)

EVALUATION FORM

to be emailed to Carlo Laj <education@egu.eu>
and francesca.cifelli@uniroma3.it

NAME of the Teacher

School name and address :

Score (5 = very good, 0 = poor)	5	4	3	2	1	0
What is your overall evaluation of the course?						
How would you rate the course with respect to its usefulness for your work?						
How would you rate the lectures?						
How would you rate the practical sessions?						

What are the main benefits that you will take from the course?

How will you apply the skills/knowledge acquired during the course to your work?

Do you plan to apply some of the GIFT 2016 educational material for your classe? If so, please specify which material and for which course (Geography, Science, Physics, other).

Did the course meet your expectations? If not, why not?

Which subjects/lectures did you find most useful?

Were there any topics which you feel could have been covered in more detail, or which should have been added to the course?

Were there any subject areas which you feel were unnecessary?

2. Make a presentation of your experience at GIFT to a group of your teaching colleagues sometime after you return from EGU

3. Send us reports and photographs about how you have used the GIFT information in your classrooms.

Reports in English, please!

And finally answer to the frequently asked question:

Can I come again to the GIFT workshop?

Every year, we welcome 10-15 % of teachers who have already attended GIFT in previous years.

These teachers are selected among those who have given us the reports!

In addition, please bear in mind that we usually donot accept more than one teacher from one particular school in the same year.

Enjoy the 2016 - GIFT Workshop!

The Committee on Education of EGU