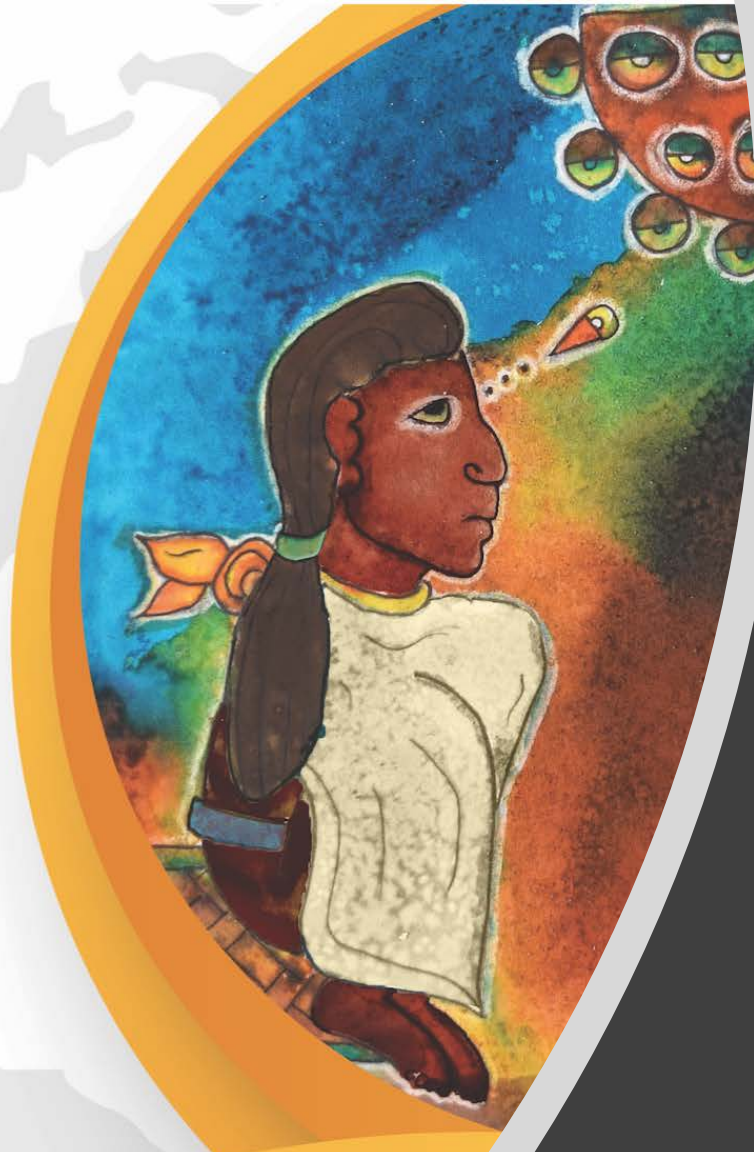


Two-Eyed Seeing: MAYAN Astronomy & NASA Moon to Mars For the Benefit of All

Everyone Welcome!

Please join us Thursday, December 17, 2020, 6:30 pm pst for a live (virtual) show featuring Mayan Indigenous Astronomy, presented by: Gerardo Aldana, Andrea Carrillo, Annette S. Lee, Andrea Medina, and Graciela Rodriguez. Our lead school is Adelante Charter School in Santa Barbara, California. Supporting organizations are Native Skywatchers, NASA, and the Chicano Studies Institute at UC Santa Barbara.



Welcome by –
Annette S. Lee,
Gerardo Aldana,
Andrea Medina

Mayan Eclipse Cycles

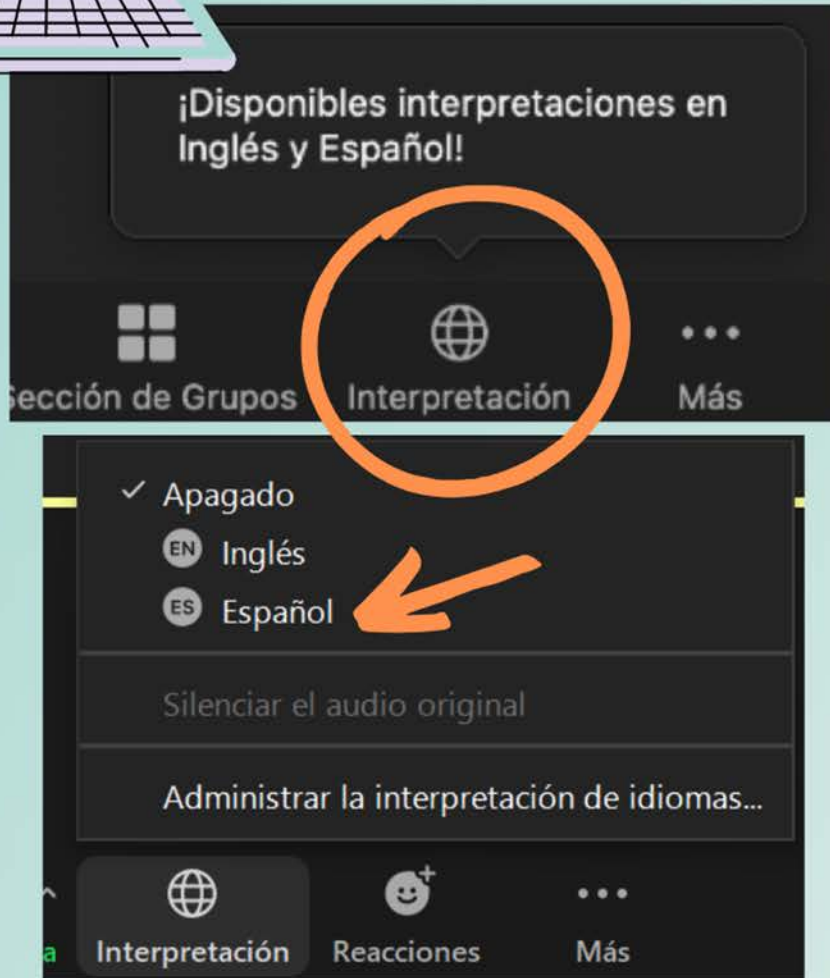
“Two-eyed Seeing” is learning to see from one eye with the strengths of Indigenous knowledges and from the other eye with the strengths of Western knowledges and ways of knowing, and to use both these eyes for the benefit of all. “ -Bartlett, Marshall and Marshall 2012

Interpretación disponible en español. | Interpretation in Spanish Available!

PARA ACCEDER A LA INTERPRETACIÓN



Por computador



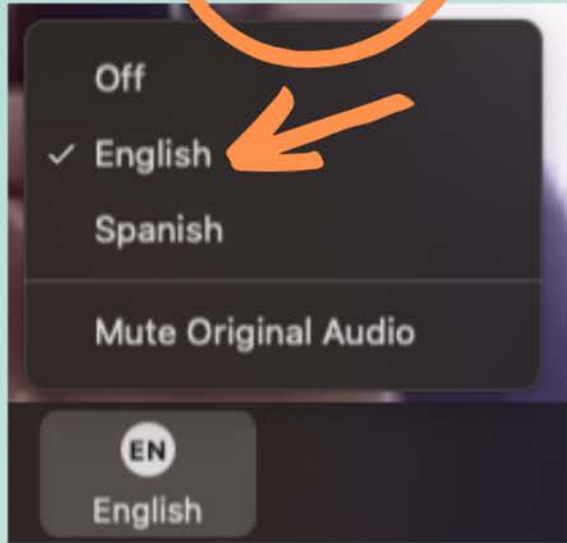
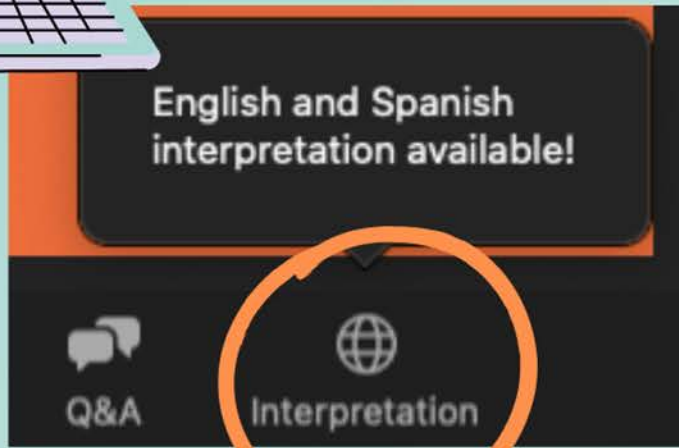
Por teléfono inteligente



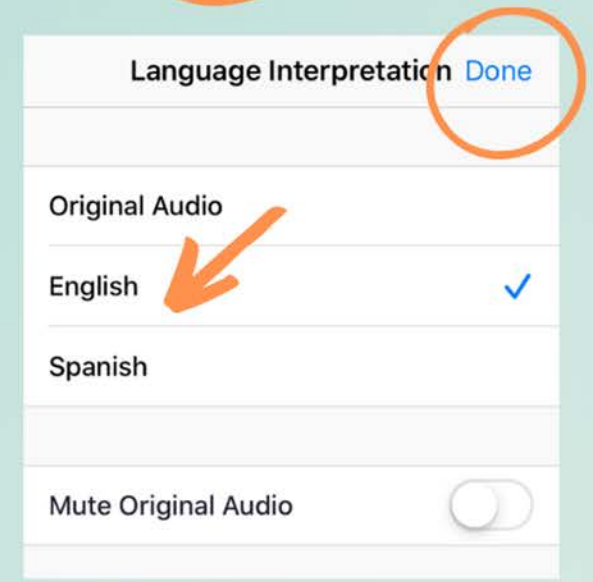
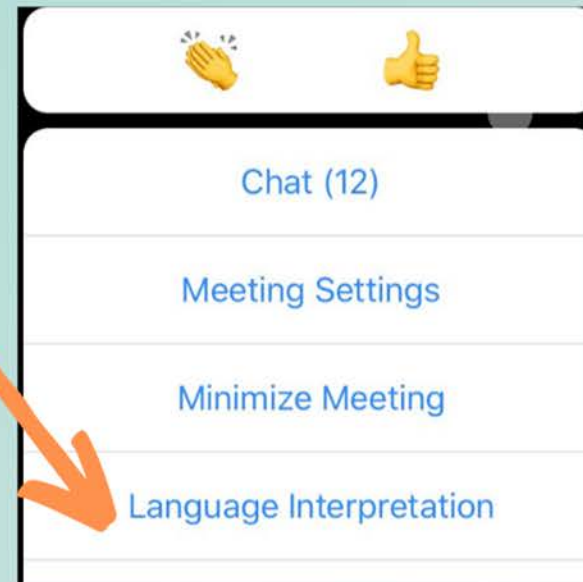
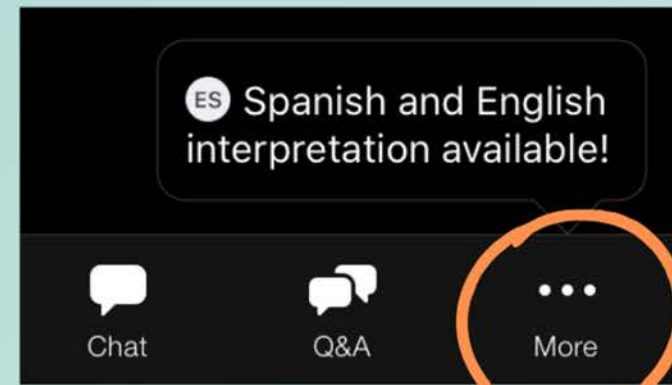
TO ACCESS INTERPRETATION



Via computer



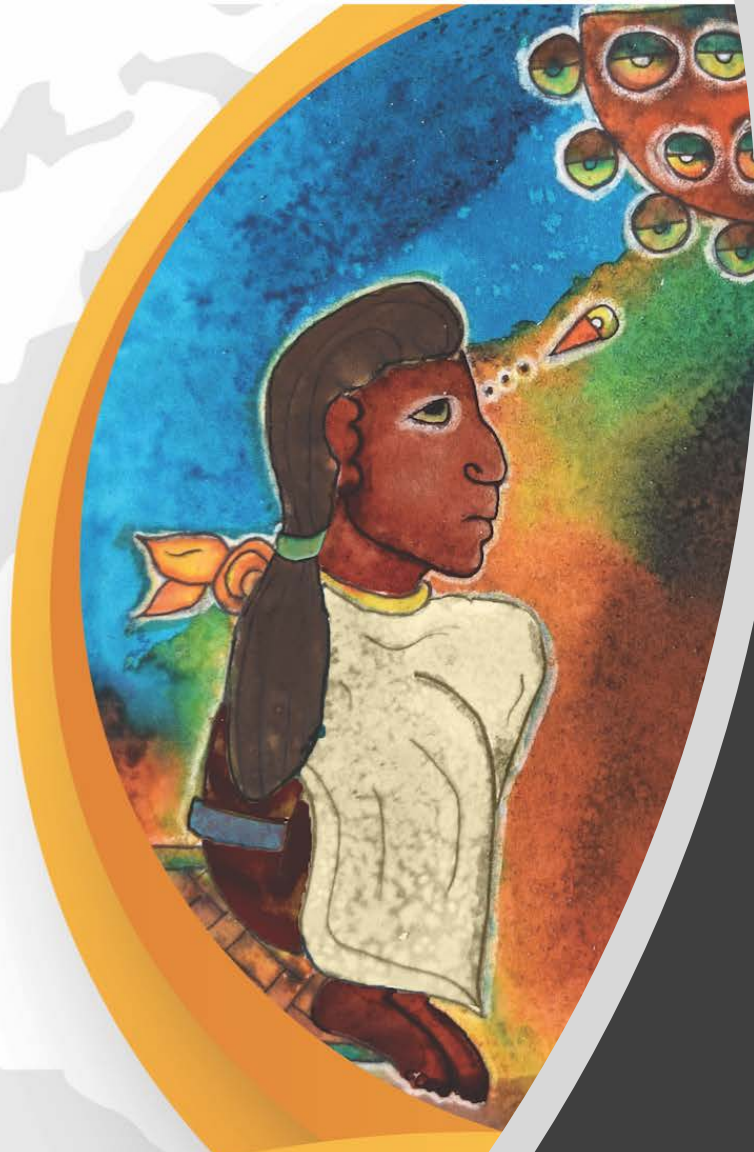
Via smartphone



Two-Eyed
Seeing:
MAYAN
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Mayan Eclipse Cycles

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Ancient MAYAN ECLIPSE Cycles!

Chol Qijj – the 260 Day Count

With the help of our 1st grade partners, learn the basic count used in Mayan texts to track astronomical cycles.

Communities of Time

Classic Mayan Art and the K'iche' Creation narrative known as the Popol Vuh represent time and elements of time as a balance, and not as a mechanical, objective process. Our 1st grade partners recount the story of Vukub Kaquix (7 Macaw), the false Sun.

The Classic Period Lunar Series

See how Mayan scribes recorded the phases of the Moon within their historical inscriptions.

Xultun Moons and Modern Satellites

Find out how archaeologists encountered a mural showing Classic Mayan astronomers by using remote sensing and satellite technology.

The Dresden Codex Eclipse Table

See how a Postclassic scribe tracked eclipse cycles as recorded in a 14th century Mayan screenfold manuscript known as the Dresden Codex.

Thursday December

17th

6:30-7:30 pm pst
2020

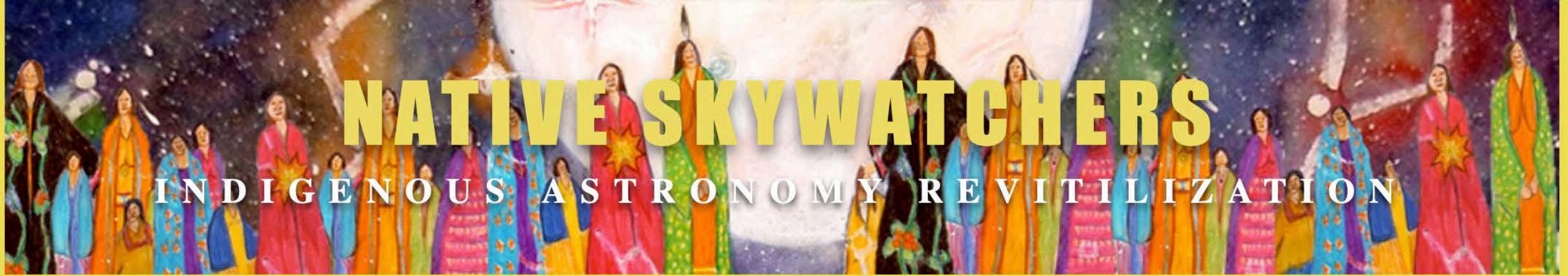
REGISTER >

[HTTPS://US02WEB.ZOOM.US/WEBINAR/REGISTER/WN_CE3WJFUGS3UGJBD-RQHP1A](https://us02web.zoom.us/webinar/register/wn_ce3wjfugs3ugjbd-rqhp1a)
WWW.NATIVESKYWATCHERS.ORG

Funded by NASA-Next Gen STEM

We respectfully acknowledge that in the Santa Barbara region, we live on the ancestral lands of Chumash communities.





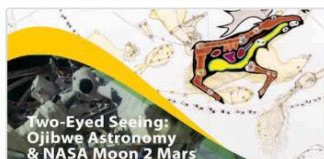
Two Eyed Seeing – NASA & Indigenous Astronomy – For the Benefit of All

As described by Mi'kmaw elders: *Etuaptmumk*

Two-Eyed Seeing is learning to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of Western knowledges and ways of knowing, and to use both these eyes for the benefit of all. (Bartlett, Marshall and Marshall 2012, 336)

Join us!...For this eight month project that weaves together Indigenous Astronomy and NASA content in a way that will engage K-12 learners to participate in science and culture. Seven seasonal live (virtual) events will be produced and delivered each month Oct. 2020 to April 2021. Funded by NASA - Next Gen STEM, focus: Moon to Mars & STEM on Station.

Schedule of Upcoming Live Shows for this Project:



Two-Eyed Seeing:
Ojibwe Astronomy
& NASA Moon 2 Mars

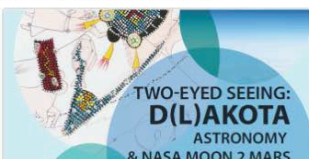
Two Eyed Seeing:

**OJIBWE Astronomy & NASA
Moon 2 Mars**

Friday, October 23, 2020

from 10-11 am cdt

[More Info](#) [Register](#)



TWO-EYED SEEING:
D(L)AKOTA
ASTRONOMY
& NASA MOON 2 MARS

Two Eyed Seeing:

**D(L)AKOTA Astronomy &
NASA Moon 2 Mars**

Friday, November 13, 2020

from 10 am – 11 am cst

[More Info](#) [Register](#)



Two-Eyed
Seeing:
MAYAN
Astronomy
& NASA Moon to Mars
For the Benefit of All

**Two Eyed Seeing:
Mayan Astronomy & NASA
Moon to Mars**

December 17, 2020

from 6:30-7:30 pm pst
=8:30-9:30 pm cst



**Two Eyed Seeing:
NAVAJO-DINE Astronomy &
NASA Moon 2 Mars**

January 2021

TBA

[Coming soon...](#)



**Two Eyed Seeing:
AFRICAN Indigenous
Astronomy & NASA Moon 2
Mars**

February 2021

TBA

[Coming soon...](#)

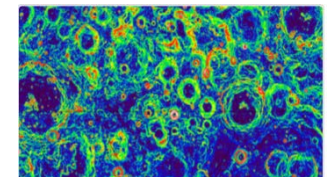


**Two Eyed Seeing:
HAWAIIAN Indigenous
Astronomy & NASA Moon 2
Mars**

March 2021

TBA

[Coming soon...](#)



**Two Eyed Seeing:
STEAM, Indigenous
Astronomy & NASA Moon 2
Mars**

April 2021

TBA

[Coming soon...](#)

Introduction & Welcome



I. NASA astronaut – Jose Hernandez



Ia. Communities of Time



Two-Eyed Seeing: Ancient Mayan Eclipse Cycles

The Ch'ol Qij and Mayan Time



Two-Eyed Seeing: Ancient Mayan Eclipse Cycles

The Ch'ol Qij
by Andrea Carrillo's 1st Grade Class
at Adelante Charter School



Ib. Chol Qijj – the 260 Day Count.



Chicano
Studies
Institute

Two-Eyed Seeing: Ancient Mayan Eclipse Cycles

7 Kaquix (adapted from the *Popol Vuh*)
by Graciela Rodriguez's 1st Grade Class
at Adelante Charter School



II. The Classic Period Lunar Series.



Two-Eyed Seeing: Ancient Mayan Eclipse Cycles

The Lunar Series

Illa. Xultun & Modern Satellites



Two-Eyed Seeing: Ancient Mayan Eclipse Cycles

Xultun & Modern Satellites

IIIb. NASA- Artemis – How We Go



IIIc. Infrared Technology



Two-Eyed Seeing: Ancient Mayan Eclipse Cycles Infrared Technology

IIId. Xultun Moons



Two-Eyed Seeing: Ancient Mayan Eclipse Cycles

Xultun Moons

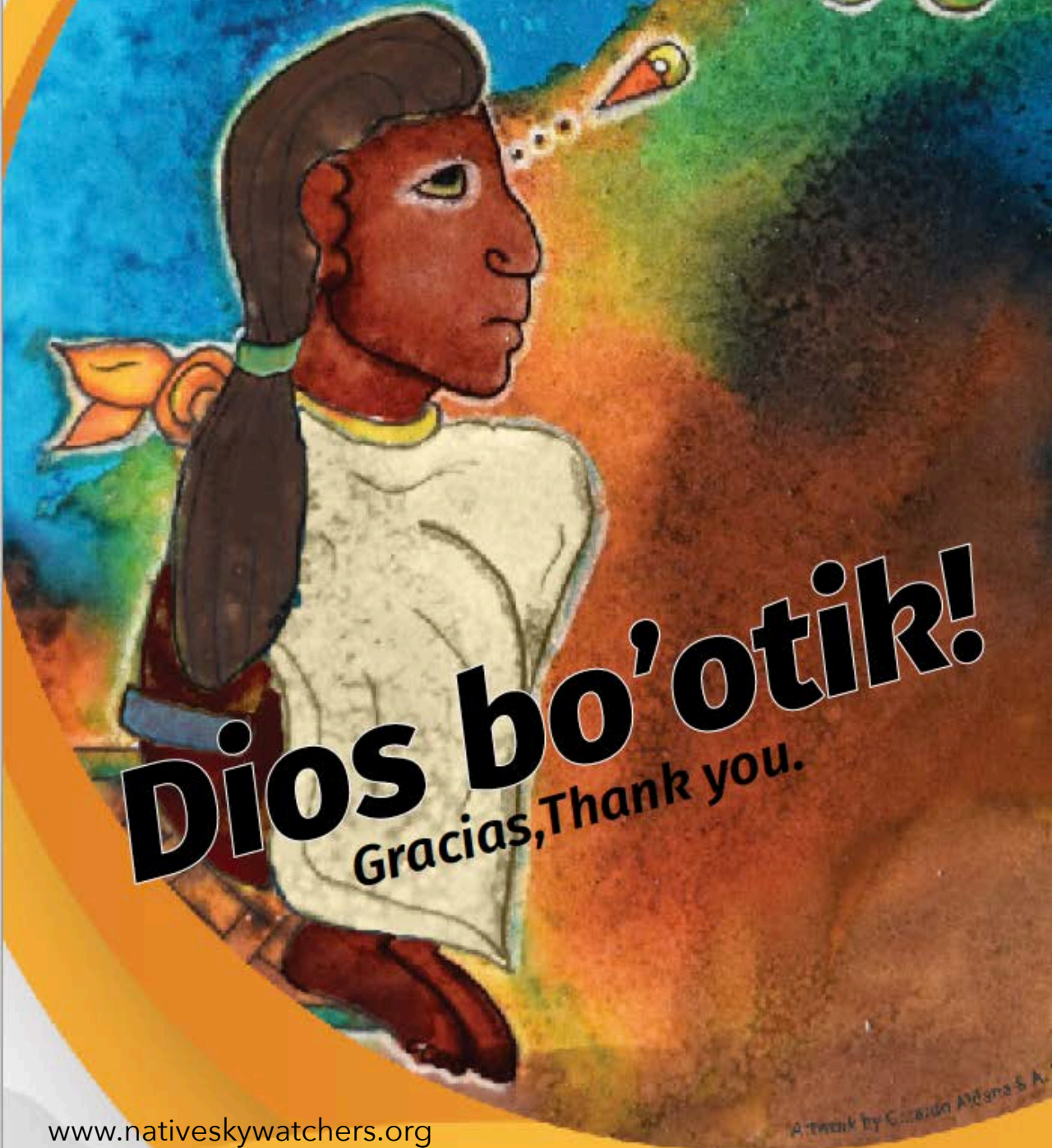
IV. The Dresden Codex Eclipse Table.



Two-Eyed Seeing: Ancient Mayan Eclipse Cycles

Eclipses in the Postclassic

Q & A



Dios bo'otik!
 Gracias, Thank you.

www.nativeskywatchers.org

Credit for this work:

Aldana, Gerardo, Annette S. Lee, Andrea Medina . "Two-Eyed Seeing: Mayan Astronomy & NASA Moon to Mars", Dec. 2020, <https://nativeskywatchers.com/two-eyed-nasa-maya.html>

Additional Thanks to:

Supporting organizations: *Native Skywatchers*, NASA, and the Chicano Studies Institute at UC Santa Barbara.

Educator Leads and Partnering Schools: Andrea Carrillo and Graciela Rodriguez at Adelante Charter School in Santa Barbara, California

Funded by:

NASA-Next Gen STEM

how the 260 Day Count guides ceremonial activities, which involve deities. In the image (lower-right), we find a list of Day Signs below a numerical coefficient. The number was originally '3', but the first dot has been eroded, so it looks like a '2'. The list depicts a sequence of Day Signs, *Ix*, *Kimi*, *Etz'nab*, *Ok* and *Ik'*. If we recognize the 3 as part of a sequence of dates, we find they are separated by 52 days ($3 \text{ Ix} + 52 \text{ days} = 3 \text{ Kimi}$; $3 \text{ Kimi} + 52 \text{ days} = 3 \text{ Etz'nab}$; etc.), which is basically what the rest of the almanac tells us. Specifically, the scribe depicted *Chaak* in each section below a paragraph of text. That text gives us a time interval of 13 days

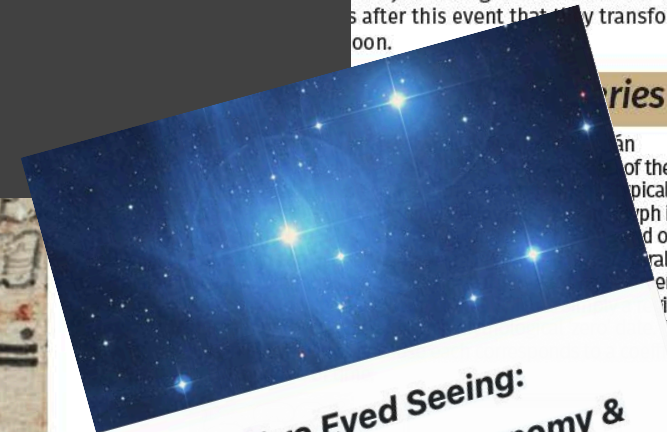


The Keepers of Time



Plate: The Maize God (Hun Nal Ye), http://research.mayavase.com/kerrmaya_hires.php?vase=1892

ir personalities in this transformation, re the responsibilities of keeping time inhabitants. What appears to be a Classic 'iche' story is depicted on a plate chop at/near X. In the scene, the Maize of a turtle carapace, brought forth by am Ajaw as cognates of the Hero Twins. s after this event that they transformed oon.



**Two Eyed Seeing:
 NAVAJO-DINE Astronomy &
 NASA Moon 2 Mars**

January 2021

TBA

Coming soon...

Glphs G & F Glph D