An Eclipse is Coming! An Eclipse is Coming!

A Total Solar Eclipse is Coming!

Spring 2024
Prof. Pamela Gossin
Email: psgossin@utdallas.edu

Eclipse: April 8, 2024!
Office: JO 5.404
Office HRs: just email me for appointment!

HIST 6386 / PHIL 6351
(meets concurrently with HIST/PHIL 3328)
History and Philosophy of Science ~ Perspectives: Hidden Figures' Lives Matter
(Special Astronomy & Solar Eclipse Edition!)
W. 4 – 6:45 pm AD 2.216

Catalog Description: HIST 6386 (PHIL6351) History and Philosophy of Science and Technology (3 semester credit hours) The study of one or more topics in history and philosophy of science, technology, or medicine. May be repeated for credit as topics vary (9 semester credit hours maximum). (3-0) T

No specific mathematical or scientific background is required; however . . .
curious minds ready to embrace the spirit of exploration and discovery will definitely come in handy!

Description of Course Topics and Themes:
In this interdisciplinary history course we will ask such questions as: Where did science come from? How did human beings begin to make sense of the natural world and their part in it? How do our human powers of observation, imagination, invention and discovery shape our understanding of the natural world? By exploring many different kinds of source materials and texts, we will trace the origins and development of western science and its construction of natural knowledge from the ancient world through the near present. In the process, we will gain experience with different pedagogical approaches – lecture, discussion, individual presentations, group work, inquiry-based and project-based learning (PBL), as well as a variety of best-practices for integrating interdisciplinary materials (literature, history, philosophy and art) into math and science content.

Among our central inquiries will be: What is "nature"? What is "natural"? What is "supernatural"? and How have our definitions of such concepts changed over time and altered our ideas about what it means to be "human"? Do we "discover" order in the universe or do we "invent" it? Was there such a thing as the "Scientific Revolution"? Whether there was or not, how have historians used such concepts to tell stories about the development of science, and why? How have the relationships between (and relative values and roles of) imagination, faith and reason shifted from the ancient world through the early modern period into the present? How can the untold (and under-told) histories of "hidden figures'" contributions to math and science help us tell a fuller, more meaningfully "global" narrative about "life, the universe and everything"?

*** Bonus feature *:**

This course is specifically intended to help students appreciate and celebrate the scientific, historical, cultural and artistic significance of the "once-in-most-lifetimes" Total Solar Eclipse of April 8, 2024 (with DFW expecting 3 minutes 52 seconds + of totality) – Coming soon to the open skies near you!

Class Format and Structure:

Something for everyone! Includes some informative slidetalks, LOTS of reading and discussion, individual and group activities and in-class presentations. Sciences covered will include: natural history, astronomy and cosmology, medicine, life sciences and experimental science, all of which involve "mathematization" in their methods of inquiry and their forms of recording and communicating results about their understanding of nature. We will see the *interconnected* stories of science, math and the arts and humanities unfold!

Course Learning Objectives:

* Students will develop college-level literacy skills by reading, discussing and writing about a wide range of materials, including primary scientific, literary and historical texts as well as scholarly interpretations.
* Students will practice and improve their ability to interpret and analyze complex information, themes and issues in the history of science using various critical methods, including literary, historical, philosophical, biographical and cultural approaches.
* Students will learn to identify and appreciate the contributions to natural knowledge made across the disciplines, across human history and around the globe, and will gain deeper understanding of well-known and "hidden" individuals' complex approaches to studying the natural world.
* Students will gain skills in collaboration and communication as they research and design an "integrated learning" (interdisciplinary) group project that draws upon the Arts, Literature, History, Philosophy to imagine and create a K-12 math or science lesson plan or b) a "public humanities/citizen science" presentations or project inspired by the lives and work of "hidden figures."

In addition to the above, graduate students will work on their own to conduct interdisciplinary scholarly research, critique past and current teaching theories and formulate original syntheses that inform and are applicable to real-world pedagogical methods, classroom lesson plans and practices.

Course Grading: For HIST 6386 and PHIL 6351

1. Attendance and participation (A&P*) = 1/3rd

- Attend and participate each week AND complete the following learning activities:
- Sun & Moon Lab Observations DUE Sun. March 25th!
- "Creative Cultural Perspective" on your personal TOTAL Solar Eclipse (Mon. April 8th) observation experience: 1-page, typed single-spaced write-up DUE April 17th)
- Individual and Group Discussion assignments in-class (TBA weekly)
- REQUIRED Reading Journal, with weekly lecture, reading + discussion notes / reflections

2. Science Secrets Critique = 1/3rd: DUE February 28th

Prompt/guidelines will be provided

3. 10-12 page, Final Research Project = 1/3rd

Research paper + Poster Talk: DUE either W. April 24 OR W. May 1st

NOTE: Additional expectation of graduate student rigor: While graduate students will be meeting concurrently with the undergraduate section, their weekly participation and assignments will be graded against other grad. students only, with the expectation that they will demonstrate at least master's level benchmarks for critical thought and understanding. Graduate students' Midterm Critiques and Final Projects will require independent research, theoretical interpretation and analysis in addition to demonstration of pedagogical understanding and applications.

REQUIRED BOOKS (7) : FOR PURCHASE or RENT or LIBRARY check-out):

* Note: our additional weekly in-class readings and visual materials will all be available for FREE in the "LIBRARY RESERVES" folder on our class eLearning page!
* Please bring the required texts OR your reading notes about that day's readings to class on the day that we discuss it.

1. Maryboy, Nancy C. and Begay, David, ***Sharing the Skies: Navajo Astronomy*** (Tucson, AZ: Rio Nuevo Pub, 2010) 978-1-933855-40-0
2. West, Adrian, ***The Secret World of Stargazing*** (Yellow Kite, 2022) ISBN-10: 1529382076 ISBN-13: 978-1529382075
3. Cormack, Leslie B. and Ede, Andrew, ***A History of Science in Society, Volume I: From the Ancient Greeks to the Scientific Revolution***, 3rd ed., U Toronto Press, 2016. ISBN-13: 978-1442635036 [Also E-Textbook and on KINDLE]
4. Principe, Lawrence. ***The Scientific Revolution: A Very Short Introduction.*** Oxford UP, 2011 ISBN 13: 978-0199567416 [Also on KINDLE]
5. Wells, HG, ***Time Machine*** (Readers Library Classics, 2022) ISBN-10: 1954839456 ISBN-13: 978-1954839458
6. Miyazawa, Kenji. ***Night on the Galactic Railroad and Other Stories from Ihatov*** (One Peace Books, 2014) ISBN-10: 1935548352 ISBN-13: 978-1935548355
7. Martinez, Alberto. *Science Secrets: The Truth about Darwin's Finches, Einstein's Wife, and Other Myths*. U. Pittsburgh Press, 2011. **ISBN 13:** 978-0-8229-6230-4 [Also on KINDLE]

PLUS . . .

All Graduate students will propose and develop individual final projects in consultation with Prof G. They will be expected to research and read 3-5 current "popular" science/math books, in addition to 3-5 current article-length studies of educational theory, neuroscience or educational psychology to use as background for their final papers and lesson plans. These may include some texts or chapters from the Undergraduates' book list below as well as resources found via the UTD Library and other databases.

Undergraduates' "Perspectives on Science" book list:

1. Jahren, Hope. ***Lab Girl*.** (Vintage; Reprint, 2017) ISBN-13: 978-1101873724
2. Clark, Andy. ***The Experience Machine: How Our Minds Predict and Shape Reality*** (Pantheon, 2023) ISBN-13: 978-1524748456

3. Yong, Ed. ***Immense World: How Animal Senses Reveal the Hidden Realms Around Us*** (Random House, 2023). ISBN-13: 978-0593133255
4. Kimmerer, Robin Wall. ***Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*** (Milkweed Editions, 2015). ISBN-13: 978-1571313560

5. Ellenberg, Jordan. ***How Not to be Wrong: The Power of Mathematical Thinking*** (Penguin, 2015) ISBN-13: 978-0143127536
6. Cheng, Eugenia. ***Is Math Real? How Simple Questions Lead Us to Mathematics' Deepest Truths*** (MIT, 2023). ISBN-13: 978-1541601826

7. Bogard, Paul. ***The End of Night: Searching for Natural Darkness in an Age of Artificial Light*** (Back Bay Books, 2014). ISBN-13: 978-0316182911
8. * Mack, Katie, ***The End of Everything (Astrophysically Speaking)*** (Scribner, 2020) ISBN-13: 978-1982103545 * They may be speaking at UT-Dallas soon!

9. Heligman, Deborah. ***Charles and Emma: The Darwins' Leap of Faith*** (Square Fish, 2011) ISBN-13: 978-0312661045
10. Powers, Richard, ***Bewilderment: A Novel*** (W.W. Norton, 2021) ISBN-13: 978-0393881141
11. Yoshino, Genazburo, ***How Do You Live?*** Trans. Bruno Navasky (Algonquin Young Readers, 2021). ISBN-13: 9781616209773 or ebook: 9781643751610

12. Aveni, Anthony, ***In the Shadow of the Moon: The Science, Magic, and Mystery of Solar Eclipses*** (Yale UP, 2017) ISBN-13: 978-0300223194
13. Baron, David, ***American Eclipse: A Nation's Epic Race to Catch the Shadow of the Moon and Win the Glory of the World*** (Liveright, 2017) ISBN-13: 978-1631490163

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COURSE CALENDAR – Weekly Topics & Assignments

UNIT ONE: In the Beginning . . .
The History of Science ~ Prehistory to Late-Medieval Era

WK 1: W. January 17: What is the "History" of Science?

4-5:15pm

FILL OUT questionnaires; Intro to class and overview of syllabus; expectations for homework (3-5 hours/week); Importance of discussion and participation; Graded essays, exams; Group Projects/Presentations.

TOUR our eLearning Course Page and "Library Reserves" FREE readings folder!

Q&A with Meet and Greet (roll call): Who are you? Why did you sign up for this class? Introduce yourselves and share something you like, are curious about or are afraid of in the universe!

< BREAK – usually 10-15 min >

5:30-6:45pm

SLIDE-TALK: Personal Perspectives on the Cosmos and the 2024 Solar Eclipse!
+ How-to do Reading Journals and be "Partner Pair" Discussion Leaders.

VIEW in class and DISCUSS: How-to do your Moon and Sun Lab Observations (as explained by Dr. Marc Hairston, NATS / Hanson Center for Space Sciences)

WK 2: W. January 24: The Quest Begins . . . Look Up!

REQUIRED READING/VIEWING for TODAY's CLASS – Read, listen, view, take READING JOURNAL notes on the class materials listed below BEFORE class begins today!

From our Library Reserves Folder in eLearning:

VIEW: Professional / Personal Perspectives about how our brains learn*:* "Stress, Trauma and Education" and *The Brain*, ep. 1: "What is Reality?"

VIEW: Other 'Expert' Perspectives: *CrashCourse*: *History of Science,* ep. 1
- "Naked Eye Observations," *CrashCourse: Astronomy,* ep. 2
- "Cycles in the Sky," *CrashCourse: Astronomy,* ep. 3

From our Required texts:

READ: Ede & Cormack, ***History of Science in Society*****,** vol. 1: Ancient Greeks to the Scientific Revolution: Introduction, pp. iv-xii and Chp 1, Origins of Natural Philosophy, pp. 1-27

READ: ***Secret World of Stargazing,*** Intro + Chp 1, Stargazing is Good for You, pp. 1-6; 7-16

READ: ***Sharing the Skies: Navajo Astronomy*****,** pp. 7-31

4-5:15pm

VIEW in class: Where HUMA x STEM and it all starts to go wrong! (Brian Regan)

DISCUSS: "Stress, Trauma and Education" and *The Brain*, ep.1

GUIDE by your SIDE: "Understanding Nature--Prehistory to Early History: From Nature Survivors to Nature Studiers" – Prof G. slide-talk w/ Q&A

DISCUSSION LEADER PAIRS:

DISCUSS: Hank Green in *CC: History of Sci*ence ep.1: _____, _____

Ede & Cormack, Intro and Chp 1: _____, _____

<BREAK>

5:30-6:45pm

VIEW in class: "Wicaŋhpi Oyate (Star People) Under One Sky," keynote address, Prof. Annette Lee, International Dark-Skies Assoc, Global Conference, 2020

DISCUSSION LEADER PAIRS:

DISCUSS in relation to: *CrashCourse: Astronomy*, ep. 2 & 3: _____, _____

DISCUSS in relation to: *Stargazing*, pp. 1-6; 7-16: _____, _____

DISCUSS in relation to: *Sharing the Skies,* pp. 7-31: _____, _____

WK 3: W. January 31: Early History of Science: Ancient World Views

REQUIRED READING/VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

From our Library Reserves Folder in eLearning:
VIEW: Perspectives on Identity: *The Brain*, ep.2: "What Makes Me?"
* [Safety concern: brain anatomy images and discussion of a violent act from the past]
VIEW: C*rashCourse: History of Science*, ep. 2: "Presocratics"

READ: Lindberg, *Beginnings of Western Science: The European Scientific Tradition*
Chp 1, Science Before the Greeks, pp. 1-20 (pdf)
Chp 2, Greeks and the Cosmos, pp. 21-45 (pdf)
+ NTSA Blog essay on anti-racism in STEM teaching (pdf)

From Required texts:
READ: ***Secret World of Stargazing***, Chp 2: "Start Looking Up," pp.17-32
READ: ***Sharing the Skies: Navajo Astronomy***, pp.33 - top half of 51

4-5:15pm DISCUSSION LEADER PAIRS:
DISCUSS: *The Brain*, ep.2: "What Makes Me?" _____,_____

GUIDE by your SIDE: Ancient Astronomy overview

DISCUSS: Lindberg, *Beginnings of Western Science*:
Chp 1, Science Before the Greeks, pp. 1-20 (pdf) _____,_____
Chp 2, Greeks and the Cosmos, pp. 21-45 (pdf) _____,_____

DISCUSS: C*C: History of Science*, ep. 2: "Presocratics" _____,_____

<BREAK>

5:30-6:45pm
VIEW in class and DISCUSS: *Ancient Skies*, ep. 1: "Gods and Monsters": EVERYONE!

DISCUSS: ***Secret World of Stargazing***, Ch 2: "Start Looking Up" 17-32: _____,_____
and ***Sharing the Skies: Navajo Astronomy***, pp.33- 51: _____,_____

WK 4: W. February 7: Ancient Greek Science Goes Viral?

REQUIRED READING/VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

From our Library Reserves Folder in eLearning:
READ: Lindberg, *Beginnings of Western Science*: Chp 3, Aristotle's Philosophy of Nature, pp. 45-66 (pdf)
VIEW: "Plato and Aristotle" (CC:HoS, ep. 3)
READ: Baigrie, *Scientific Revolutions: Primary Texts in the History of Science*: Aristotle, pp. 1-6; Ptolemy, pp. 7-12; Lucretius, pp. 13-15
READ: Leila McNeill, "Monsters, Myths and Constellations"
READ: Alic, Margaret, *Hypatia's Heritage*, excerpt, pp. 35-49, esp. 41-46; and the Hypatia Wikipedia entry
* [Safety concerns: visual art and verbal descriptions of violence]

** EXTRA CREDIT: VIEW: ***Cosmos: A Spacetime Odyssey***, ep.8: *Sisters of the Sun*
(50 bonus pts! write a 1-page critique in relation to McNeill and Hypatia readings; DUE Feb 14

From Required texts:
READ: Ede and Cormack, *History of Science in Society*, Chp 2, Roman Era and Rise of Islam, pp. 29-63
READ: ***Secret World of Stargazing***, Chp 3: "Night Sky," pp. 33-50

4-5:30pm DISCUSSION LEADERS
DISCUSS: ***Secret World of Stargazing***, Chp 3: "Night Sky," pp. 33-50: _____

GUIDE by your SIDE: "Greeks to Geeks? It's Complicated . . ." – Prof. G, slide-talk

DISCUSS: "Plato and Aristotle" (CC:HoS, ep. 3): _____
DISCUSS: Lindberg, *Beginnings of Western Science*:
Chp 3, Aristotle's Philosophy of Nature, pp. 45-66: _____,_____

<BREAK>

5:45-6:45pm: DISCUSSION LEADERS

DISCUSS: Aristotle, Ptolemy and Lucretius: _____
DISCUSS: Ede/Cormack, *History of Science in Society*:
Chp 2, Roman Era and Rise of Islam, pp. 29-63: _____,_____

DISCUSS: McNeill and Hypatia readings: _____,_____
Say Her Name: Hypatia ("high-pay-sha") - A "Great Woman of Science" story?

WK 5: W. February 14: ***Centering or Re-centering the Cosmos?***

REQUIRED READING / VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

In Library Reserves Folder in eLearning:

READ **1 of 2** chapters:

Lindberg, *Beginnings of Western Science,* Chp 11: Medieval Cosmos, pp. 252-285 (pdf)

OR Chp 13: Medieval Medicine & Natural History, pp. 321-356 (pdf)

READ: **3 of 5** selections:

Baigrie, *Scientific Revolutions: Primary Texts*, Copernicus, pp. 16-39; Vesalius, pp. 40-49; Paracelsus, pp. 50-55; Francis Bacon, pp. 62-70; William Harvey, pp. 71-87

VIEW: **3 of 6** episodes:

"Roman Engineering" (CC: HoS, ep. 6);
"Medieval Islamicate World" (CC: HoS, ep. 7)
"Medieval China" (CC: HoS, ep. 8)
"Ancient to Medieval Medicine" (CC: HoS, ep. 9)
"India" (CC: HoS, ep. 4)
"Americas and Time-Keeping" (CC: HoS, ep. 5)

VIEW: Kepler, *The Man Who Dreamed the Universe*, pt. 1

From Required texts:

READ: Principe, *The Scientific Revolution*, Intro and Chp 1: New World and Old World, pp.1-20 and Chp 2: The Connected World, pp. 21-38

READ: ***Secret World of Stargazing***, Chp 4: "Seasons" + Chp 5: "Spring Night Sky," pp.51-74

** EXTRA CREDIT: READ: Ede / Cormack, *History of Science in Society*, Chp 3, pp. Revival of Natural Philosophy in Western Europe, pp. 65-90 and write a 1-page, typed, single-spaced summary/critique relating this chapter to our class themes and discussions so far. DUE Feb. 28th

4-5:15pm

GUIDE by your SIDE: Things Above / Things Below and New Perspectives – Prof. G / slide-talk w/ Q&A

DISCUSSION LEADERS:

DISCUSS: Stargazing . . . Chps 4 + 5: _____

DISCUSS: Lindberg, Medieval Cosmos: _____ and _____

Medieval Medicine: _____ and _____

<BREAK>

5:30-6:45pm

CONNECT: CrashCourse episodes: _____, _____, _____

DISCUSS: Principe, *Sci Rev*, Intro, Chps 1+2: _____ and _____

Baigrie selections: _____ and _____

CONNECT: Kepler, ep. 1: _____ and _____

WK 6: W. February 21: RESEARCH & WRITING DAY

< no regular class >

** Science Secrets Critique DUE to psgossin@utdallas.edu on SUN. February 25th by 10 pm!

WK 7: W. February 28: Astronomy X Cosmology X Evolutionary Theory

REQUIRED READING / VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

In our Library Reserves Folder in eLearning:
VIEW: Personal / Professional Perspectives: *The Brain*, ep. 3: "Who is in Control?"
* [Safety concern: brief references to sexuality, violence]

VIEW: fun video: "Top 10 Notes on *The Time Machine*"

From our Required texts:
READ: ***Secret World of Stargazing***, Chps 6+7: "Summer Night Sky" + "Autumn Night Sky," pp.75-106:
READ: H.G. Wells, ***Time Machine*** (whole book!):

4-5:00pm
Guide by your Side: *"Natural History of the Heavens"* slide-talk

DISCUSSION LEADERS:
DISCUSS: ***Stargazing***, Chps 6 + 7: _____

<BREAK>

5:15-6:45pm

DISCUSS: *The Brain,* ep. 3: _____
H.G. Wells, ***Time Machine*** (whole book!): _____, _____
_____, _____

UNIT TWO

The History of Science continues . . . Revolutions to Evolution

WK 8: W. March 6: ***Cultural Perspectives on Life in the Milky Way***

REQUIRED READING/VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

In our Library Reserves Folder in eLearning:
VIEW: *The Brain,* ep. 4: "How do I decide?"
* [Safety concern: brief visual/verbal references to sexuality, addiction, violence]
VIEW: Amber Ruffin Shares a Lifetime of Traumatic Run-ins with the Police (20 min)
VIEW: Why Dark Skies Matter: website + "Losing the Night" video
+ Earth turning under the Milky Way video

From our Required texts:
READ: ***"Night on the Galactic Railroad"*** novella, pp. 45-112
READ: ***Secret World of Stargazing***, Chp 8: "Winter Night Sky" + Chp 9: "Milky Way," pp. 107-134
READ: ***Sharing the Skies: Navajo Astronomy***, pp. 51-76

4-435 pm <No Break today!>
VIEW in CLASS: Beginning Japanology NHK documentary on Miyazawa (33 min)

440-6:45pm
VIEW in class: "Night on the Galactic Railroad" (animated film, edited for time)
DISCUSS in relation to: NGRR novella: _____, _____, _____

DISCUSS: Dark Skies; Losing the Night: _____, _____, _____
Stargazing; *Sharing*: _____, _____, _____
DISCUSS: *The Brain* and Amber Ruffin: _____, _____, _____

< SPRING BREAK: March 10-17th >

WK 9: W. March 20 : MOON & SUN Lab Report Prep Time **and** "Start your Final Research Project Day!

< NO regular in-class meeting >

1. Moon and Sun Lab Observations and Reports are DUE SUNDAY March 24th by 10 pm
Please create ONE pdf (compressed) and start the file name with your LAST NAME

2. DUE W. March 27th in class: turn in a 1-page (single-spaced) typed Final Project proposal
Include the following: What is your thesis? What are your main sources? How do they relate to our class ideas so far? Any surprising fun facts? Any challenges?

WK 10: W. March 27: "Our" Place in the Universe?

REQUIRED READING / VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

In our Library Reserves Folder in eLearning:
VIEW: *The Brain*, ep. 5: "Why do I need you?"
[* Safety concerns: take extra care – significant references to & images of human violence]

VIEW **3** out of 8: "Alchemy" (CC: HoS, ep. 10)
"Scientific Methods" (CC: HoS, ep. 14)
"Cathedrals + Universities" (CC:HoS, ep.11)
"Exploration, Empire…" (CC:HoS, ep.16);
"Scientific Revolution" (CC: HoS, ep.12)
"The New Anatomy" (CC: HoS, ep. 15)
"The New Astronomy" (CC:HoS, ep.13)
"Newton + Leibnitz" (CC:HoS, ep.17)

LISTEN to **1** of 2: - SciFri podcast, N.K. Jemisin, "The Fifth Season"
- SciFri podcast, Nisi Shawl, Aisha Matthews, "Pushing Boundaries in Fantastical Fiction"

+ PLUS: Read and Journal/Discuss: NY Times essay on AfroFuturism

READ: A. C. Clarke, "The Star" from *Science and the Human Spirit*, pp. 293-98
READ: "Extraterrestrial Life" from *Science and the Human Spirit*, pp.142-160

From our Required texts:
READ: Principe, *The Scientific Revolution*, Chp 3: Superlunary World, pp. 39-66
+ Chp 4: Sublunary World, pp. 67-92
READ: ***Secret World of Stargazing***, Chp 10: "Moon and Planets"
+ Chp 11: "Space Rocks," pp.135-162
READ: ***Sharing the Skies: Navajo Astronomy***, pp. 76-94

** EXTRA CREDIT: Ede and Cormack, *History of Science in Society,* Chp. 4: Science in the Renaissance: Courtly Philosophers, pp. 91-127

4-5:15pm
GUIDE by your SIDE: "There was no such thing as the Scientific Revolution" & this is a slide-talk about it!
DISCUSSION LEADER PAIRS:
DISCUSS: Principe, Chps 3+4: _____, _____
DISCUSS: *CC: Hist of Science* episodes: _____, _____

<BREAK>
5:30-6:45pm
DISCUSS: *Stargazing* + *Sharing*: _____, _____
DISCUSS: "The Star" and "Extraterrestrial Life": _____, _____
DISCUSS: Podcasts: _____, _____

VIEW in class and DISCUSS: "The Great Silence" (film adaptation of Ted Chiang's short story)

WK 11: W. April 3: Is Seeing Believing?

REQUIRED READING / VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

In Library Reserves Folder in eLearning:
READ: Baigrie, *Scientific Revolutions*, Tycho, pp. 56-61; Galileo, pp. 88-98; Isaac Newton, pp.133-150

READ: from Bogard, *The End of Night*, Intro, pp. 3-13
+ Chp 9 "From Starry Night to Streetlight" (really the "first" chapter– see if you can figure out why it's labeled #9): pp.14-39
+ Chp 1 "Darkest Places" (really the ninth chapter!): pp. 246-71

VIEW the Opening from "Under One Sky," International Dark-skies Global Conference, 2022
https://youtu.be/iVBtYcRCSX0

Then VIEW 2 (or more!) of these …
From "North, South, Central America": https://youtu.be/1o3-YQV-HRk
From "Bangladesh": https://youtu.be/_buoII_L-Eo
From "Europe, Middle East, Africa, India": https://youtu.be/tn4nC1Wyg8A
From "E and SE Asia, Australia, New Zealand": https://youtu.be/8KYA9DQUarA

From Required texts:
READ: Ede and Cormack, *History of Science in Society*, Chp. 5: The Scientific Revolution: Contested Territory, pp.129-163
READ: ***Secret World of Stargazing***, Chp 12: "Spaceships and Things that Move in the Sky" + Chp 13: "Gadgets–Taking Your Stargazing a Step Further" + Chp 14: "To Boldly Go…"pp.163-188

4-5:45pm
GUIDE by your SIDE: "Global / Universal" Cosmology + Eclipse Adventures (2017/2023)
DISCUSSION LEADERS:
DISCUSS: Ede/Cormack, Chp 5: _____, _____
DISCUSS: Tycho, Galileo, Newton: T:_____, G:_____, N:_____

DISCUSS: Bogard, Intro, Chps 9 + 1: _____,_____
DISCUSS: Under One Sky videos: _____, _____, _____, _____
DISCUSS: Stargazing, Chps 12-14: _____, _____

<BREAK>

6-6:45pm: FINAL PROJECT / PRESENTATION WORKSHOP: FORM GROUPS + Go over GUIDELINES

* HOMEWORK: print out DUE in class next week, W. April 10!
Write a 14-line love poem (formal or informal sonnet) to your favorite astronomical phenomenon . . .

* REMEMBER: TOTAL Solar Eclipse – MON. APRIL 8th!!! Required "A&P-Creative Cultural Perspective" 1-page, printed, single-spaced essay on your personal observation experience, DUE 4.17th!
** UT-Dallas WILL have Eclipse Observation events on campus!! **

WK 12: W. April 10: Ideas of Evolution (before/after Darwin)

REQUIRED READING / VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

In our Library Reserves Folder in eLearning:
VIEW: "Darwin, Wallace and Natural Selection" (CC:HoS, ep. 22);
"Radioactivity and Marie Curie" – FINALLY! (CC: HoS, ep. 31);
"Gender and Science" (CC:HoS, ep. 46)

PLUS 1 of these 3:
"Biology before Darwin" (CC: HoS, Ep. 19)
"Earth Science" (CC: HoS: ep. 20)
"Francis Galton and Genetics" (CC: HoS, ep. 23)

From our Required texts:
READ: Principe, *The Scientific Revolution*, Chp 5: The Microcosm and the Living World, pp. 93-112
+ Chp 6: Building a World of Science, pp.113-132 + Epilogue, pp. 133-135
READ 1 of these 4:
Janet Browne, *Darwin's Origin of Species,* Chp. 2: "A Theory of Which to Work" + Chp 3: Publications, pp. 35-57; 58-83 (pdf)
"Darwin," selection for 1st edition (1859), *On the Origin of Species,* pp. 95-135 (pdf)
"Charles Darwin" selection, from Baigrie, Scientific Revolution, pp. 285-98 (pdf)
"William Herschel…" pp. 175-183 and "A Portrait of Caroline Herschel," pp. 184-88

4-5:45pm
GUIDE by your SIDE: "Ideas of Evolution"

DISCUSS *CC: Hist of Science* videos: _____, _____
DISCUSS: Principe, final chapters: _____, _____
DISCUSS: Darwin and Herschel readings: _____, _____

VIEW in class and DISCUSS: *Ancient Skies*, ep. 3: EVERYONE!

<BREAK>

6-6:45pm: FINAL PROJECT WORKSHOP: GROUP Brainstorming Session + Prof G. consults.

* HOMEWORK: DUE to psgossin@utdallas.edu by MONDAY, April 15th at 10 pm:
Draw/Create a visual representation of your favorite astronomy concept, thing, moment or observer!

WK 13: W. April 17: The Art of Astronomy and Cosmology

REQUIRED READING / VIEWING for TODAY's CLASS – Read, listen, view and take READING JOURNAL notes on these materials BEFORE class begins!

In our Library Reserves Folder in eLearning:
VIEW: *The Brain,* ep. 6: "Who Will We Be?"

READ 1 of these 2 chapters form *Celestial Sleuths*
Chp 2: "Vincent van Gogh & Starry Skies Over France,"pp. 35-66
OR: Chp 5: "Moons and Tides in the Battle of Marathon, Paul Revere's Midnight Ride and the Sinking of the Titanic," pp. 147-198 (read 1 of the 3 episodes)

READ 1 of these 4 PAIRS of brief life stories from *The Sky Belongs to Everyone*:
Gabriela Gonzalez, pp. 322-332 and Priyamvada Natarajan, pp. 344-354
Dara J Norman, pp. 355-365 and Sara Seager, pp. 366-376
Poonam Chandra, pp. 388-399 and Xuefei Chen, pp.400-410
Shazrene S. Mohamed, pp. 411-422 and Yilen Gomez Maqueo Chew, pp. 423-432

4-5:45 pm
DISCUSS student poetry and art work
VIEW in class: Joselyn Bell Brunell video
DISCUSSION GROUPS: DISCUSS video in relation to readings from *The Sky Belongs to Everyone*
DISCUSS The Brain, episode 6

<BREAK>

6-6:45 pm * GROUP PROJECT FINAL PLANNING; PRACTICE SESSION + Prof. Consults

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WK 14: W. April 24: GROUP PRESENTATIONS w/ PEER FEEDBACK, Groups #1-4

VIEW, WRITE and HAND IN a printed 1-page Reflection on "Un-hidden Perspectives: Nature's Stories" – DUE: April 24 OR May 1st (whichever day you are NOT presenting!)

Choose ONE (or more!):
READ: Richard Powers, selection from *Overstory;*
VIEW: Carolyn Finney, Chicago Wilderness Event
READ: Robin Wall Kimmerer, selections from *Braiding Sweetgrass;*
LISTEN: Jane Goodall, interview;
VIEW: Save the Dark (IDA) OR Sandhill Crane Viewing
VIEW: Gary Cocke, Sustainability Office, UT-Dallas
VIEW: Princess Kaguya, "Go round" Japanese/English
VIEW: Google TimeLapse Earth, 1984-2021

4-5:15pm:
GROUP 1: _____, _____, _____

GROUP 2: _____, _____, _____

< BREAK >

5:30-6:45pm:
GROUP 3: _____, _____, _____

GROUP 4: _____, _____, _____

* Potluck!? Those groups who are NOT presenting today, please bring snacks & drinks to celebrate everyone's creativity!

WK 15: W. May 1st: GROUP PRESENTATIONS w/ PEER FEEDBACK, Groups #5-8

4-5:15pm:
GROUP 5: _____, _____, _____

GROUP 6: _____, _____, _____

< BREAK >

5:30-6:45pm:
(Grad. Student Posters): _____, _____, _____

(Grad. Student Posters): _____, _____, _____

* Potluck!? Those groups who are NOT presenting today, please bring snacks & drinks to celebrate everyone's creativity

GRAD. Students' revised and polished papers are DUE: Fri. May 3rd by 10 pm

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Instructor's Policies and Class Philosophy / UTD Policies

Please inform the professor *in advance* (via utd email) of any possible absences or situations that may keep you from submitting assignments on time. We'll try to help in any way we can. Late assignments will not be accepted or absences excused *without such prior notice*. Because attendance and participation count as a substantial part of your grade in this course (being "present" means really "being present"), unexcused absences, tardy arrivals, early departures, cell phone usage or other disruptions *will count against* this portion of your grade.

In accordance with university policy, this is a drug-free, alcohol-free, smoke-free, barrier-free classroom. In the interests of promoting a comfortable learning environment, all students and the professor pledge to respectfully consider the expression of ideas and opinions by others regardless of political, philosophical, religious, intellectual, cultural, racial, generational or other identity uniqueness.

Any student found guilty of plagiarism (using another person's thoughts, words, ideas, terminology etc. without properly acknowledging them with footnotes, endnotes, or parenthetically in the text with a bibliography will be subject to disciplinary action under the policies of the University of Texas-Dallas. See the university's student code, MLA style sheet or Chicago Manual of Style for more information.

All syllabus info., descriptions and timelines are subject to change at the discretion of the Professors.

Students are responsible for listening for in-class announcements/changes and checking their UT-Dallas email account for additional messages or postings (which may supercede info. on this syllabus).

Helpful Hint: Assume that all assignments will be submitted in class, to the professor in hardcopy, unless it is announced otherwise on this syllabus or in class. Never turn in papers or assignments "under the office door" bc . . . little known secret: my office is the TARDIS – Who knows where your stuff could end up!?.

NOT ALL CHANGES WILL BE IN WRITING, SO PAYING ATTENTION IN CLASS WILL BE VITAL.

Classroom Safety and COVID-19
To help preserve the University's in-person learning environment and to minimize transmission to those most vulnerable who share our community, UT Dallas recommends that all Comets show they care by doing their best to keep themselves and others healthy and safe. As new variants continue to emerge, N95 or KN95 medical grade masks are STRONGLY recommended for ALL indoor class meetings or gatherings.

Comet Creed
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same: "As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources
The information contained in the following link lists the University's academic support resources for all students. Please see http://go.utdallas.edu/academic-support-resources.

eLearning Tutorials
If you experience trouble with accessing or using eLearning (you are not alone!), contact the eLearning Help Desk at (866) 588-3192 or at elearning@utdallas.edu. There is also online Chat Help.

UT Dallas Syllabus Policies and Procedures
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class. Please go to http://go.utdallas.edu/syllabus-policies for these policies.