

## OLLI at DU Syllabus – Spring 2024

### *The Birth and Death of Stars*

Tuesday Mornings Online; 8 weeks

Facilitator: Stewart Jones

**RECOMMENDED BOOKS OR MATERIALS:** *The Life and Death of Stars*, Kenneth R. Lang, Cambridge University Press, New York, 2013

### **WEEKLY TOPICS**

First Week, Video: Measuring the stars with light

Reading Lang, Chapter 1: Light of the Sun, pp. 1-17

Second week, Video: Stellar nurseries and the dynamics of star formation

Reading Lang: Chapter 2, Gravity and motion, pp. 18-30

Third Week, Video: Solar systems in the making and mass – the DNA of stars

Reading Lang: Chapter 10, New stars arise from darkness, pp. 201-218

Fourth Week, Video: Stellar families – star clusters and a portrait of our star, the Sun

Reading Lang: Chapter 6, The extended solar atmosphere and Chapter 7, Comparisons of the sun with other stars, pp. 102-156

Fifth Week, Video: Nuclear fusion, stars in middle age and stellar death

Reading: Lang, Chapter 3, Atomic and subatomic particles and Chapter 4, Transmutation of the elements and Chapter 5, What makes the sun shine, pp. 31-101

Sixth week, Video: Stellar corpses – white dwarfs and neutron stars, cepheids and supernovae and supernova remnants and galactic geysers

Readings: Lang, Chapter 8, The lives of stars, pp. 157-185 and Chapter 11 Stellar end states, pp. 219-258

Seventh week, Video: The dark mystery of the first stars and stars as magnets

Readings: Lang, Chapter 6, The extended solar atmosphere, pp. 102-127

Eighth week, Video: Solar storms and the stellar recipe of life

Readings: Lang, Chapter 12, A larger expanding universe and Chapter 13, Birth, life, and death of the universe, pp. 259-311