



Welcome

What do we hope to learn this week?

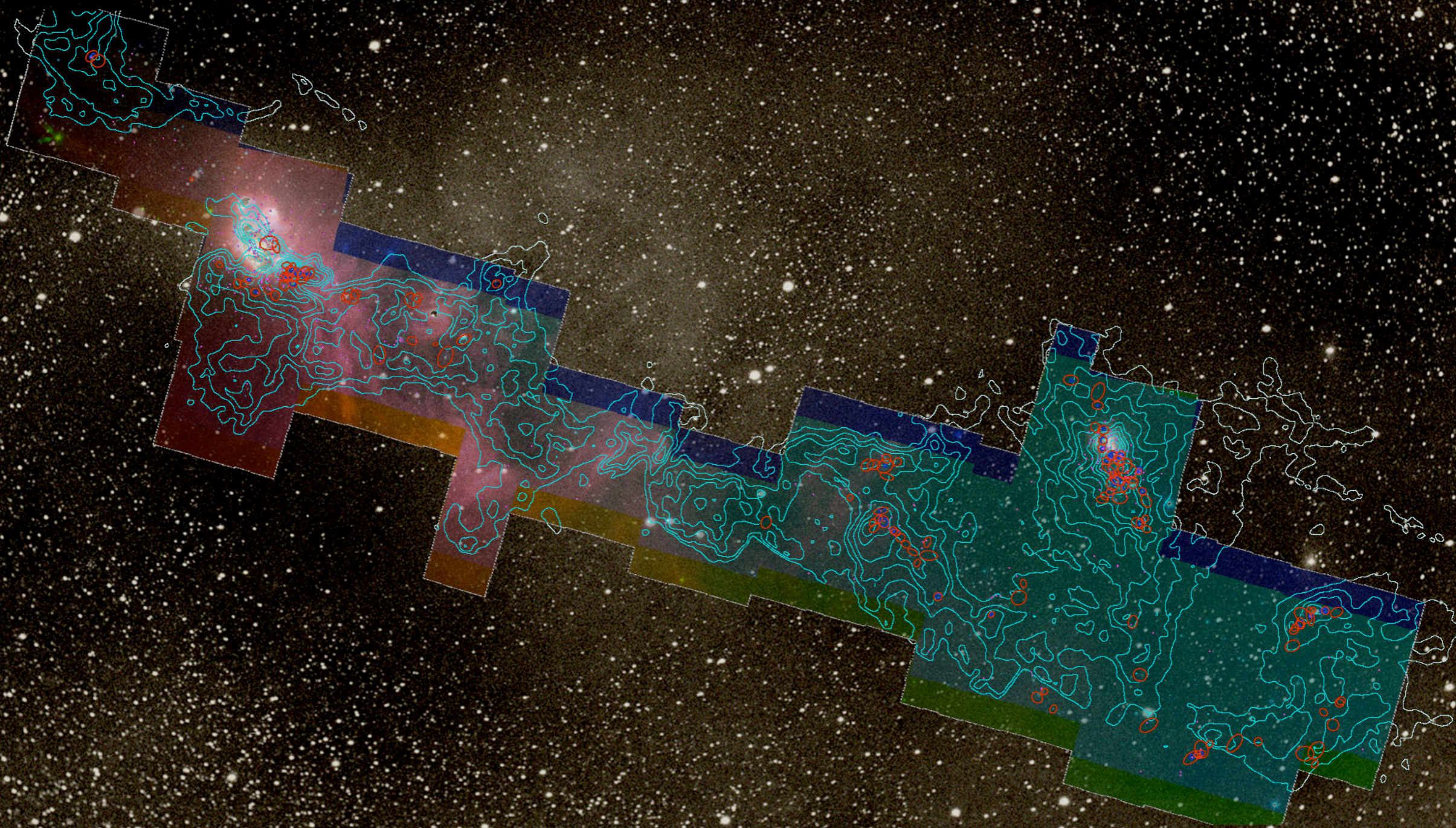
*Come tomorrow to hear exactly what this is!*

What do we hope to learn this week?



*Come tomorrow to hear exactly what this is!*

# What do we hope to learn this week?



*Come tomorrow to hear exactly what this is!*

# COMPLETE

Alyssa Goodman  
Jens Kauffmann  
Jaime Pineda  
Scott Schnee  
Rahul Shetty



Neal Evans  
Melissa Enoch  
Jens Kauffmann  
Phil Myers  
Deborah Padgett

## FCRAO Taurus Survey

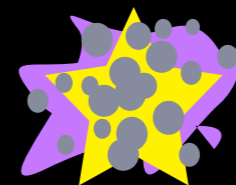
Paul Goldsmith

## Spitzer Taurus Survey

Deborah Padgett

## Spitzer Cluster Survey

Tom Megeath  
Phil Myers



## “Taste-Tests”

Chris McKee, Paolo Padoan, Rahul Shetty  
& everyone here!

# Stars

- Have we now found “all” the young stars in regions surveyed?
- What is the “present” mass function in these regions?  
Is that the IMF for those regions?
- What is the full story on multiplicity?
- What is the best way to measure stellar ages?
- What is the prevalence, and what are the properties, of outflows and shells?
- What, if anything, have we learned about timing and or sequence of star-formation?
- Why are protostars faint?
- What can we agree was the biggest stellar “surprise”?
- Stuff AG & CM forgot: \_\_\_\_\_

# Gas

- What is the “true” column density distribution, and how does it vary over space? What does the “CMF” mean?
- What is the temperature distribution?
- What kinematic process(es) best describe gas motions at what scale(s)? (e.g. “turbulence,” “shocks,” “inflow,” “infall,” “outflow,” etc.)
- What is the prevalence, and what are the properties, of outflows and shells?
- How bound is the gas, to what, and where?
- What’s “between” clumps? What’s the nature of the “interclump medium”?
- How important is the magnetic field?
- Can we tell how long various structures last?
- What can we agree was the biggest gaseous “surprise”?
- Stuff AG & CM forgot: \_\_\_\_\_

# Making Stars from Gas

- What **fraction** of gas is converted to stars, when?
- What happens to the **rest** of the gas?
- How much does “**environment**” matter? Are star-forming cores always “**coherent**” and **near-thermal**?
- How do **massive stars** form?
- Role of **feedback**? (Kinematic, thermal, chemical.)
- When are stars “**lost**” from the “cloud”?
- Can we agree on the “**Mouschovias** (timing) Diagram’s” labeling?
- Stuff AG & CM forgot: \_\_\_\_\_



# What takes how long?

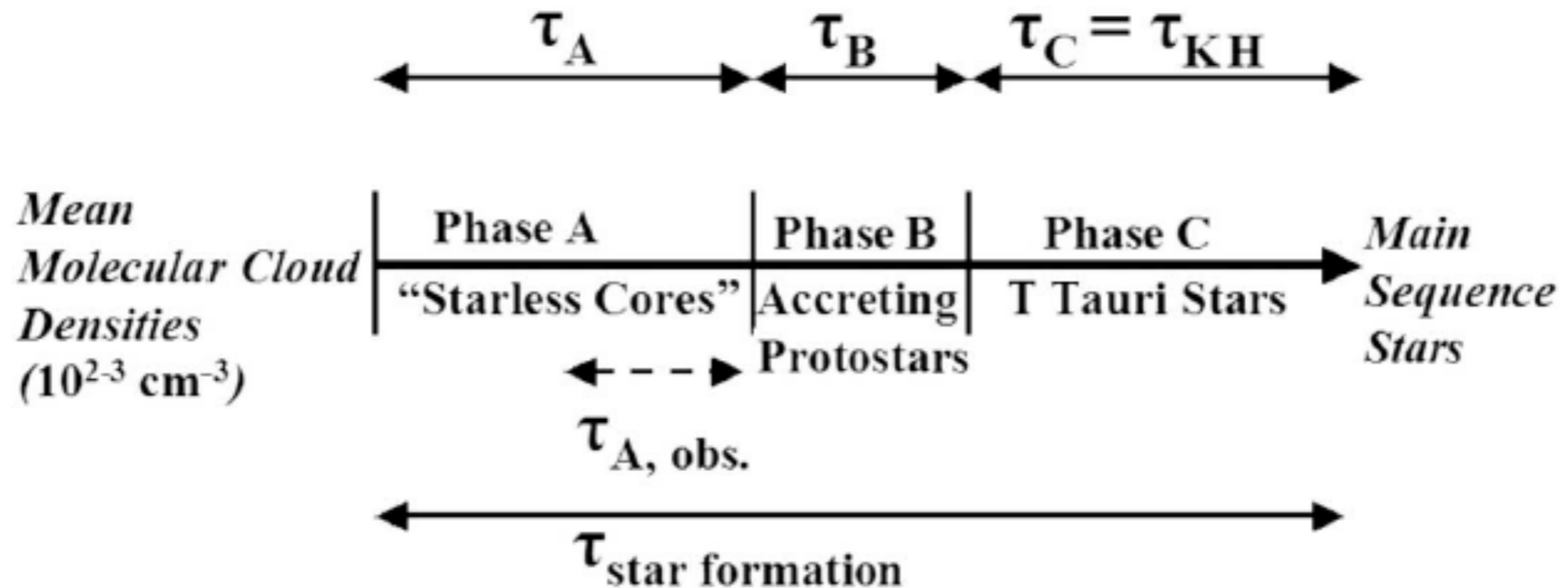


FIG. 1.—Star formation timeline (not to scale).

Q. What's the definition of "starless"?

# And what about (gas &) dust?

- Are gas & dust **temperature** coupled? Where?
- Are gas & dust **well-mixed**? Does dust “settle”?
- How does **extinction** vary with **wavelength**, and how much does that vary?
- How does **opacity** vary, overall, and with wavelength?
- Is there evidence for **grain growth**? Where?
- Stuff AG forgot: \_\_\_\_\_

# Collaborative Tools

Note: the page icons are hyperlinked in the online version of these slides.

## Taste-Testing “Basecamp” Goodman/Shetty

The screenshot shows a web browser displaying the "Star Formation Taste Tests" project page on Basecamp. The page title is "Star Formation Taste Tests cfa". It features a navigation menu with options like Overview, Messages, To-Do, Milestones, Writeboards, Chat, Time, Files, People, Search, and Permissions. The main content area includes a "Project overview & activity" section with a "Welcome to the Tasting Room" message and a list of recent messages and milestones. A sidebar on the right contains a search bar, navigation links, and a list of project members.

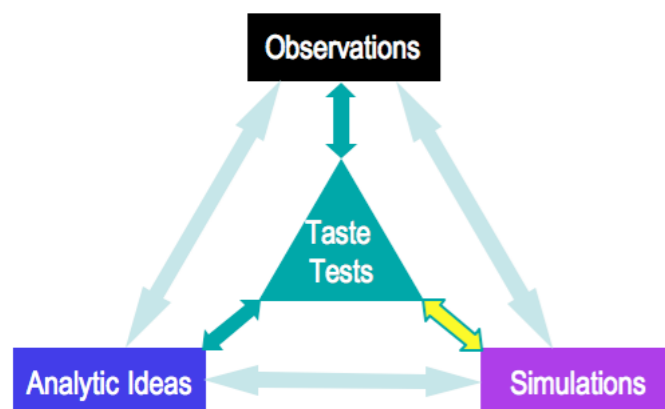
## KITP Wiki Offner

The screenshot shows a Wiki page titled "Surveys of Nearby Star Forming Regions mini-workshop". The page includes a description of the workshop, a schedule table, and a list of participants. The schedule table is as follows:

Day	Who	Description	When & Where
<b>Opening Session</b>			
Monday (11/5)	Goodman Evans	• Part 1: What do we hope to discuss this week? (Goodman, 10 min.)	3:40 PM AUD
		• Part 2: Evolution and Star Formation Rates in Nearby Molecular Clouds Studied by the Spitzer c2d Project (Evans, 35 min + Q&A)	
<b>Survey Summaries &amp; Status, Part 1: COMPLETE &amp; c2d &amp; Taste-Testing</b>			
Tuesday (11/6)	Enoch Goodman Shetty	• COMPLETE (Goodman et al., 30 min)	9:30 AM SSR
		• c2d (Enoch, 30 min)	
<b>Survey Summaries &amp; Status, Part 2: Taurus &amp; Clusters</b>			
Wednesday	Goldsmith Megeath	• Structure of the Molecular Gas in Taurus Revealed by High Spatial Dynamic Range Spectral Line Mapping (Goldsmith, 20 min)	10:00 AM
		• The wonders of TMC-1C (Schnee, 10 min)	
• Mapping the Taurus Molecular Clouds with the Spitzer Space Telescope (Padgett, 10 min)			

## CADAC Padoan

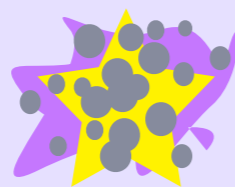
The screenshot shows the homepage of the Computational Astrophysics Data Analysis Center (CADAC). The page features a navigation menu with links for home, about, members, and documentation. The main content area includes a description of CADAC's mission and a list of more information links. The footer contains logos for SDSC, UCSD, and lca, along with the text "Official web page of the University of California, San Diego."



# The “3 KITP Questions” about Star-Formation? (ones we think present Surveys can best address)

*Can we fill this out on Friday?*

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



*On the KITP Wiki Now (from Åake Nordlund)*

0. [What is the nature of supersonic MHD turbulence in weakly ionized plasmas?](#)
  1. [What maintains the turbulence in molecular clouds?](#)
  2. [What is the role of magnetic fields in star formation?](#)
  3. [What sets the rate of star formation?](#)
  4. [What determines the IMF?](#)
  5. [How do massive stars form?](#)
  6. [How do star clusters form?](#)
  7. [How do cores collapse and disks accrete at various stages?](#)
- OTHER QUESTIONS
- A. [How do stars form in the Galactic Center?](#)
  - B. [How do binaries form?](#)