

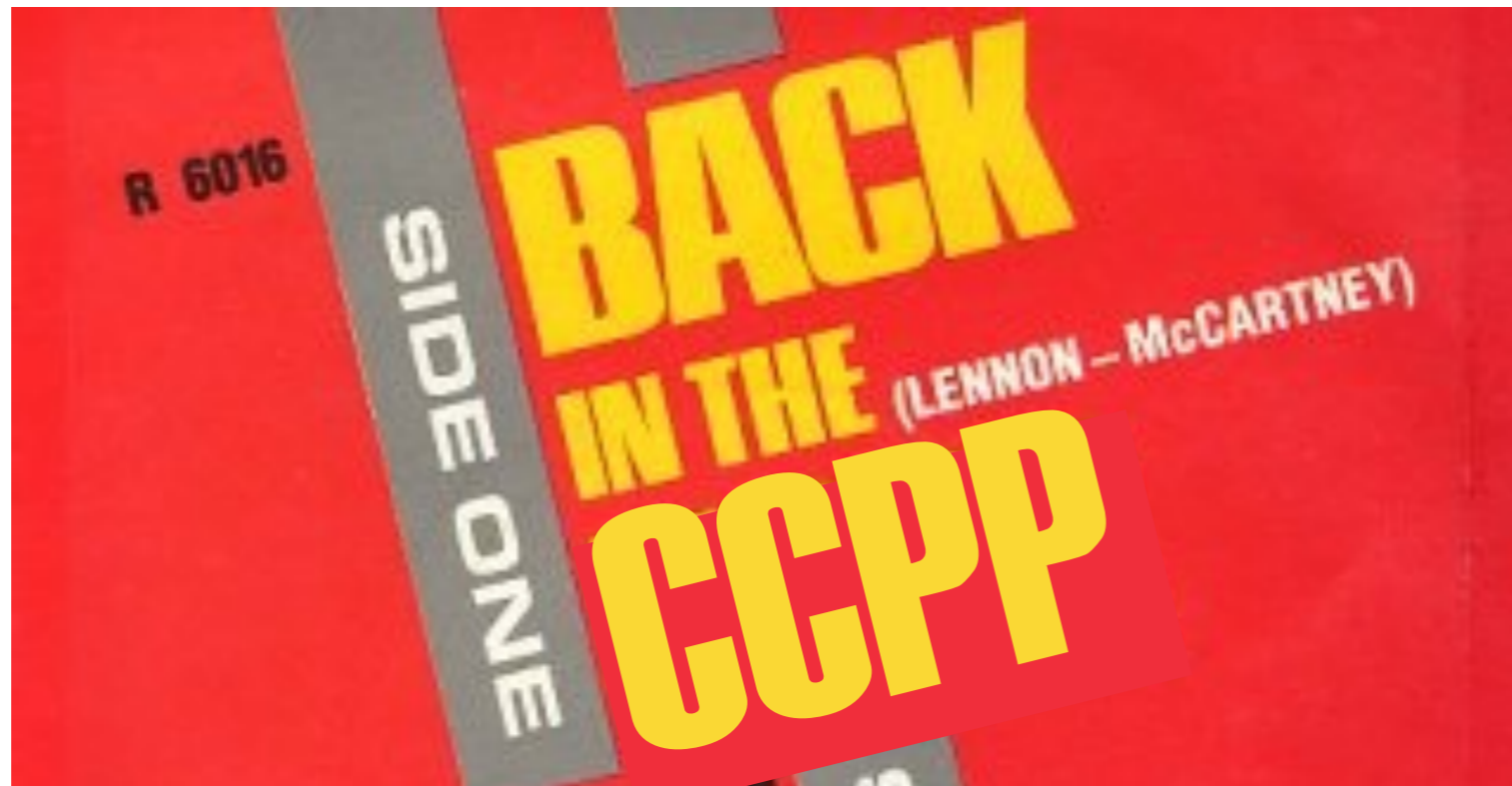
Welcome to the Center for Cosmology and Particle Physics

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... or ...

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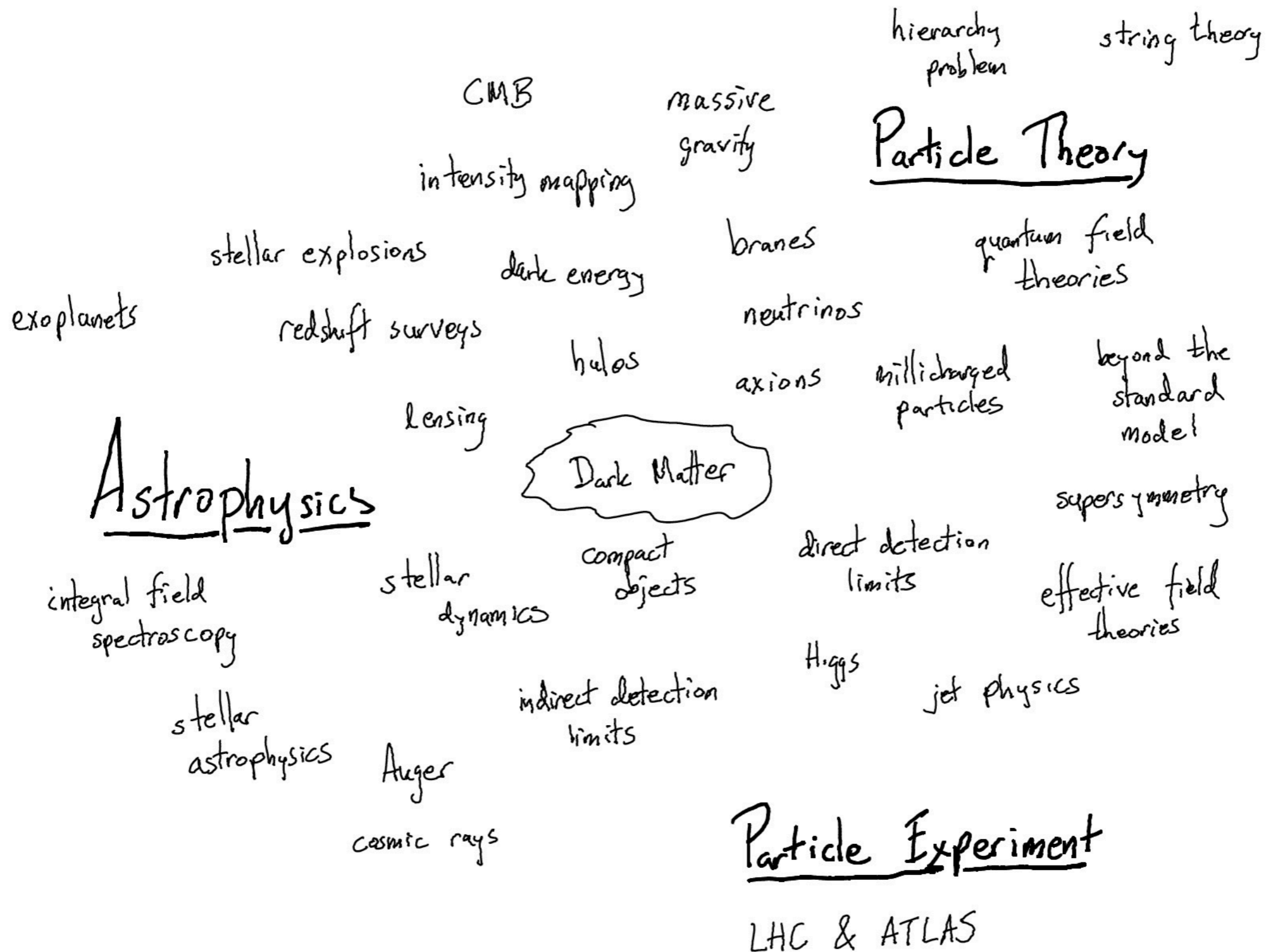
... Or ...



Outline

- What We Do
- Obligatory COVID-19 Slides
- How We Communicate
- How We Behave
- Who We Are
- New Faces
- Partnerships
- New Efforts

What CCPP does



What CCPP does during COVID

- NYU has returned to full-time in-person classes and research.
- Everybody complies with the vaccine requirements and is masked except in a private office, or eating in designated areas.
- Research seminars will still be in a somewhat hybrid mode. Broadcast on zoom, sometimes with a remote speaker.
- Visitors allowed if approved by NYU; we have a number of visitors this Fall (also must comply with vaccine requirements).

Events of the CCPP

- Brown Bag: Mondays 12:30pm EDT, followed by cookies.
 - *Mostly* blackboard talks — use slides only in case of emergency
 - *Internal and understandable to string theorists and astronomical observers*
 - The anthropic principle can only be mentioned to justify not immediately rejecting string theory.*
 - Three types:
 - Introduction to My Field talks
 - “Regular” Brown Bags
 - Short research updates
 - Leaving plenty of time for questions!

* exemptions may be applied for via a form found on NYU Home

Events of the CCPP

- Astrophysics Seminar: Tuesdays 2:00pm EDT
- High Energy Physics Seminar: Wednesdays 2:00pm EDT
- astro-ph coffee: *not yet scheduled this year*
- Big Apple Colloquium: *not yet scheduled this year*
- Other group meetings throughout the week.

Cosmology and Particle Physics Minisymposium

- Monday, Sept 20, 12:30pm (Brown Bag time)
- Overview of research in CCPP, from faculty, postdocs, and senior graduate students.
- First-year graduate students will be invited so they can learn about opportunities in this group.

Communications of the CCPP

- Web site: <https://cosmo.nyu.edu/>
 - *Events, news, emails etc.*
- Email list: fas.phys.cpp@nyu.edu
 - *Ask me (mb144@nyu.edu) or Mulin Ding (md546@nyu.edu) to get on the list*
 - *Weekly & daily updates on events*
- Also: fas.phys.cpppd@nyu.edu, fas.phys.cppgs@nyu.edu
- All Physics mailing lists and memberships can be found at <https://groups.nyu.edu> by searching for “fas.phys”

Behavior in the CCPP

- Intellectual progress requires critical engagement.
- Productive criticism requires an atmosphere of mutual trust.
- So ... be careful in how you communicate.
 - *use welcoming and respectful language*
 - *encourage participation and questions from all members*
 - *respect preferences regarding forms of address (he, she, they)*
 - *harassment and discrimination is not acceptable*
- Director of E&I in Physics is Prof. Maryam Modjaz.
- Link with many relevant university policies: <https://www.nyu.edu/faculty/governance-policies-and-procedures/faculty-handbook/selected-university-policies.html>

Behavior in the CCPP

- ALSO: common areas are ALL of our responsibility.
- Please clean up after yourselves.
- There is nobody whose job it is to make sure that a plate or cup left in a conference room or table is put in the dishwasher, or to do your dishes.

Who we are: 2 full-time staff

- Tim Johnston
(Program Administrator)



- Mulin Ding
(Systems Administrator)



Starting Sept 29 ...

We need to consciously continue to respect their time and appreciate their contribution to our success.

Who we are: 19 faculty

- Yacine Ali-Haïmoud
- Michael Blanton
- Kyle Cranmer
- Sergei Dubovsky
- Glennys Farrar
- Gregory Gabadadze
- Andrei Gruzinov
- David Hogg
- Matthew Kleban
- Andrew MacFadyen
- Maryam Modjaz
- Massimo Porrati
- Anthony Pullen
- Joshua Ruderman
- Roman Scoccimarro
- Ken Van Tilburg
- Jeremy Tinker
- Yifan Wang
- Neal Weiner

New Faculty:



Yifan Wang

fundamental theoretical physics, including conformal bootstrap, anomalies in quantum field theories, boundaries and defects,

Who we are: 12 postdocs

- Asher Berlin
- Patrick Breysse
- Hongwan Liu
- Sebastian Macaluso
- Abhishek Maniyar
- Stefano Negro
- Sarah Pearson
- Tyler Pritchard
- Oren Slone
- Christian Pedersen
- Fedor Popov
- Marco Muzio

Who we are: ~ 35 graduate students

- Michael Albergo
- Giorgi Arsenadze
- Zubair Bhatti
- Panagiotis Charalambous
- Chang Chen
- I-Kai Chen
- Matthew Daunt
- Jack Donahue
- Matthew Drnevich
- Marcus DuPont
- Nicholas Faucher
- Xucheng Gan
- Suroor Gandhi
- Cara Lynn Giovanetti
- Xuyao Hu
- Hun Jang
- Reza Javadinezhad
- Trey Jensen
- Ekapob Kulchoakrungsun
- Joan Manuel La Madrid
- Nanoom Lee
- Conghuan Luo
- Austin McDowell
- Milad Noorikuhani
- Kate Storey-Fisher
- Christopher Tiede
- Zihui Wang
- Shalma Rebeca Wegsman Gueron
- Marc Williamson
- Xingchen Xu
- Siqing Yu
- Xingyang Yu
- Shahrzad Zare
- Yucheng Zhang
- Jiarong Zhu

+ 9 interested first years!

New Graduate Students:

Giorgi Arsedadze

*cannibal dark matter and its
effect on structure formation*



New Graduate Students:



Calvin Chen

New Graduate Students:



Matthew Daunt

detection of binary systems and exoplanets using “sub-visit” spectroscopic observations

New Graduate Students:

Cara Lynn Giovanetti

*dark matter and
Beyond-the-Standard-Model
phenomenology*

New Graduate Students:



▀ **Shalma Rebeca Wegsman Gueron**

New Postdocs:



Fedor Popov

Large N Models, quantum field theory in de Sitter space, and renormalization group flow as a dynamical system

New Postdocs:



Chris Pedersen

neutrino cosmology and large-scale structure

CAP³: *Center for Astro, Particle, Planetary Physics*

- A new center supporting NYU Abu Dhabi astronomers and physicists
 - *Francesco Arneodo: astrophysics, particle physics*
 - *Ian Dobbs-Dixon: planetary interiors, atmospheric dynamics*
 - *Yosi Gelfand: supernovae, stars, pulsar wind nebulae*
 - *Andrea Macciò: dark energy, dark matter, galaxies, black holes*
 - *David Russell: black holes, neutron stars*
 - *Ingyin Zaw: particle physics, astronomy*
- Hiring 5 new research associates soon.
- Funding for visits & collaboration with NYU NY.
- PhD program in Physics at AD means that we have more first-year graduate students among us interested in CCPP topics!

Other partnerships to take advantage of

- Flatiron Institute & its Center for Computational Astrophysics
 - *several joint affiliations (Gabadadze, Hogg, Pullen, others??)*
 - *joint cosmology meeting*
 - *Flatiron group meetings often quite open to NYC participants*
- Center for Data Science
 - *affiliated postdocs & faculty*
 - *many areas of common interest*
- A number of projects:
 - *ATLAS, DESI, Las Cumbres Observatory, Pierre Auger Observatory, SDSS (-IV and -V), SphereX, EXCLAIM, others??*

From assessment process, changes to focus on this year:

- More social activities to encourage cohesiveness
- More structured mentorship and training
 - *Advisory committees for postdocs?*
 - *More actively using PhD committees for students?*
 - *Career-related town halls (academic and not)*

Goofy Meta Icebreaker Game

- Question: we've been away from each other for a while—what should we be doing to get to know each other again?
- Break up into groups of 4-5, introduce yourselves to each other, and discuss for 5-10 minutes possible fun activities for the CCPP.
- Each group will nominate somebody to report one suggestion. Or more, if you can't agree on one.

