

|                   |               |                                               |                                  |                                      |                                      |                           |
|-------------------|---------------|-----------------------------------------------|----------------------------------|--------------------------------------|--------------------------------------|---------------------------|
|                   | <b>Week 1</b> | Lecture = 80-90mins                           |                                  |                                      |                                      |                           |
|                   |               |                                               |                                  |                                      |                                      |                           |
| tentative times   |               | Monday 07/27                                  | Tuesday /07/28                   | Wednesday 07/29                      | Thursday 07/30                       | Friday 07/31              |
| 9:00-10:30 am     | Lecture 1     | Roadmap                                       | Fluid theory: reconnection       | Kinetic theory: turbulence           | Kinetic theory: collisionless shocks | Particle acceleration     |
|                   |               | <b>Noemie Globus</b>                          | <b>Dmitri Uzdensky</b>           | <b>Kris Klein</b>                    | <b>Anatoly Spitkovsky</b>            | <b>Anatoly Spitkovsky</b> |
| 10:30-11:00 am    | Coffee break  |                                               |                                  |                                      |                                      |                           |
| 11:00 am-12:30 pm | Lecture 2     | Fluid theory: waves and basic instabilities   | Kinetic theory: reconnection     | Fluid theory: dynamos                | Fusion plasmas: tokamaks             | Particle acceleration     |
|                   |               | <b>James Beattie</b>                          | <b>Dmitri Uzdensky</b>           | <b>James Beattie</b>                 | <b>Steve Cowley</b>                  | <b>Anatoly Spitkovsky</b> |
| 12:30-2:00 pm     | Lunch break   |                                               |                                  |                                      |                                      |                           |
| 2:00-3:30 pm      | Lecture 3     | Kinetic theory: foundations / waves           | Fluid theory: turbulence (hydro) | Kinetic theory: more reconnection    | Fusion plasmas: tokamaks             | Space Plasmas             |
|                   |               | <b>Dmitri Uzdensky</b>                        | <b>James Beattie</b>             | <b>Dmitri Uzdensky</b>               | <b>Steve Cowley</b>                  | <b>Kris Klein</b>         |
| 3:30-4:00 pm      | Coffee break  |                                               |                                  |                                      |                                      |                           |
| 4:00-5:30 pm      | Lecture 4     | Kinetic theory: waves and basic instabilities | Fluid theory: turbulence (MHD)   | Poster Session                       | Fusion plasmas: stellarators         | Space Plasmas             |
|                   |               | <b>Dmitri Uzdensky</b>                        | <b>James Beattie</b>             | <b>Chair: Leonardo García García</b> | <b>Steve Cowley</b>                  | <b>Kris Klein</b>         |
| 6:00-8:00 pm      |               |                                               |                                  |                                      |                                      |                           |

**Saturday 08/01 - Sunday 08/02 Visit to the Observatorio Astronómico Nacional (OAN).**

|                   |               |                                   |                                       |                                       |                              |                                                                      |
|-------------------|---------------|-----------------------------------|---------------------------------------|---------------------------------------|------------------------------|----------------------------------------------------------------------|
|                   | <b>Week 2</b> | Lecture = 80-90mins               |                                       |                                       |                              |                                                                      |
|                   |               |                                   |                                       |                                       |                              |                                                                      |
| tentative times   |               | Monday 08/03                      | Tuesday 08/04                         | Wednesday 8/5                         | Thursday 8/6                 | Friday 8/7                                                           |
|                   |               | MORNING OFF - GOING DOWN FROM OAN |                                       |                                       |                              |                                                                      |
| 9:00-10:30 am     | Lecture 1     |                                   | Observations: Neutron Stars           | Relativistic and radiative plasmas    | Observations: FRBs           | Jets and Winds                                                       |
|                   |               |                                   | <b>Yuri Levin</b>                     | <b>Amir Levinson</b>                  | <b>Bryan Gaensler</b>        | <b>Roger Blandford</b>                                               |
| 10:30-11:00 am    | Coffee break  |                                   |                                       |                                       |                              |                                                                      |
| 11:00 am-12:30 pm | Lecture 2     |                                   | Theory: NS magnetospheres and nebulae | Theory: NS magnetospheres and nebulae | FRB: theory                  | Cosmic rays in the multimessenger era - I                            |
|                   |               |                                   | <b>Ashley Bransgrove</b>              | <b>Ashley Bransgrove</b>              | <b>Amir Levinson</b>         | <b>Noémie Globus</b>                                                 |
| 12:30-2:00 pm     | Lunch break   |                                   |                                       |                                       |                              |                                                                      |
| 2:00-3:30 pm      | Lecture 3     | GR toolkit                        | Observations: Black Holes             | Observations: Black Holes             | Observations: BH /transients | Cosmic rays in the multimessenger era - II<br><b>Closing remarks</b> |
|                   |               | <b>John Mehlhaff</b>              | <b>Katherine Blundell</b>             | <b>Katherine Blundell</b>             | <b>Alan Watson</b>           | <b>Noémie Globus</b>                                                 |
| 3:30-4:00 pm      | Coffee Break  |                                   |                                       |                                       |                              | Goodbye coffee                                                       |
| 4:00-5:30 pm      | Lecture 4     | Observations: Neutron Stars       | Relativistic and radiative plasmas    | Black Hole accretion I                | Black Hole accretion II      | <b>4:00pm shuttle to he hotel</b>                                    |
|                   |               | <b>Yuri Levin</b>                 | <b>Amir Levinson</b>                  | <b>Roger Blandford</b>                | <b>Roger Blandford</b>       |                                                                      |
|                   |               |                                   |                                       |                                       |                              |                                                                      |