School of Physics and Astronomy **Session: 2015-2016**

Year 4 MPhys Project Assessment - Final Mark

Student:	Tomas James	***Degree Programme:***	F510
Project Title:	How good is dust emission as a tracer of structure in star-forming molecular clouds?		
Supervisor:	Paul Clark		
Primary Assessor:	Nicolas Peretto		
Secondary Assessor:			

Attached:

☐	Section A:	
☐	Section B:	/ 20
☐	Section C:	/ 10
☐	Section D:	0 / 30
☐	Section E:	0 / 30
☐	Section F:	/ 10
	Final Mark:	0 / 100

This cover sheet will be completed by the Project Coordinator. If the marks in Section D and E are not within 10% of each other, a third marker will be employed and an average of the three taken.

Deadline for completion: End of Exam Week 3 in the Spring Semester.

School of Physics and Astronomy **Session: 2015-2016**

Year 4 MPhys Project Assessment - Section A

Student:	Tomas James	***Degree Programme:***	F510
Project Title:	How good is dust emission as a tracer of structure in star-forming molecular clouds?		
Supervisor:	Paul Clark		
Assessor:	Nicolas Peretto		

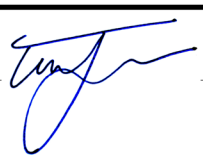
Original Objectives: Agreed at the start of the project

The goal behind Tomas' project is to test our current techniques for probing the properites of prestellar cores is observational datasets from Herschel. Tomas will first have to 1) create fake emission maps from simulation data using the radiative transfer code RADMC-3D 2) create emission maps in a range of wavelengths that cover the intrumental bands of PACS and SPIRE on Herschel 3) use the standard proceedures adopted by the observational community for converting the individual pixel SEDs to maps of column density and temperature. 4) compare the "fake" maps to the 'true' values from the SPH simulation to see where this first stage in the observational pipeline can go wrong. 4) use "dendogram" software to extract prestellar cores from both the "real" and "fake" maps, and compare the differences in the core populations. 5) compare the masses of the cores to the masses of the stars that actually do form in the simulation. If there is time, Tomas can also test how the uncertainties in the dust properties affect these measurements, and also test the quality of the dust temperatures derived in the SPH simuations by perfoming a full Monte Carlo RT dust temperature calculation on the density distribution for a given interstellar radiation field. By the end of this project, Tomas should be proficient in: using RADMC-3D; dendogram analysis; basic star formation theory; and the issues of using dust as a tracer of mass in star formation.

Risk assessment completed by student and agreed with you? ◉ Yes ○ No

Is the student working in partnership with any other students? ○ Yes ◉ No

If Yes, please add names of partners:

Signature of student:  ***Date:*** 20/10/15

Signature of supervisor:

This assessment form should be completed by the supervisor in conjunction with their project students. Supervisors should give one copy of this form and the Project Safety Overview form to the student, one copy of each to the Project Coordinator and retain one copy.

Deadline for completion and return: End of Teaching Week 2 in the Autumn Semester.

School of Physics and Astronomy — Session: 2015-2016

Year 4 MPhys Project Assessment - Section B (Supervisor)

Student:	Tomas James	***Degree Programme:***	F510
Project Title:	How good is dust emission as a tracer of structure in star-forming molecular clouds?		
Supervisor:	Paul Clark		

Supervisor's assessment of performance: *See cover note for marking criteria.*

Have the original objectives been changed ? ☐ Yes ☐ No

Have there been any extenuating circumstances which have affected the student's performance ? ☐ Yes ☐ No

If Yes, please include comments in the report below.

Mark : **/ 20**

This assessment form should be completed by the supervisor at the end of the project. Retain and return this form with the other assessments at the end of the year.

Deadline for completion and return: End of Exam Week 3 in the Spring Semester.

School of Physics and Astronomy Session: 2015-2016

Year 4 MPhys Project Assessment - Section C (Oral Presentation)

Student: Tomas James ***Degree Programme:*** F510

Project Title: How good is dust emission as a tracer of structure in star-forming molecular clouds?

Supervisor: Paul Clark

Panel Members: .....

Comments on Oral Presentation: *See cover note for marking criteria.*

Mark (to be agreed between all panel members): **/ 10**

This assessment form should be completed by the session chairperson on behalf of the panel and returned to the Project Coordinator at the end of the session.

Deadline for completion and return: End of Exam Week 3 in the Spring Semester.

School of Physics and Astronomy Session: 2015-2016

Year 4 MPhys Project Assessment - Section D (Dissertation and Viva)

Student:	Tomas James	***Degree Programme:***	F510
Project Title:	How good is dust emission as a tracer of structure in star-forming molecular clouds?		
Assessor:	Nicolas Peretto		

Primary Assessor's Assessment of Report: *See cover note for marking criteria.*

Mark : **/ 60**

This assessment form should be completed by the primary assessor independently of the second assessor. Return this form to the Project Coordinator.

Deadline for completion and return: End of Exam Week 3 in the Spring Semester.

School of Physics and Astronomy Session: 2015-2016

Year 4 MPhys Project Assessment - Section E (Dissertation and Viva)

Student:	Tomas James	***Degree Programme:***	F510
Project Title:	How good is dust emission as a tracer of structure in star-forming molecular clouds?		
Assessor:			

Second Assessor's Assessment of Report: *See cover note for marking criteria.*

Mark : **/ 60**

This assessment form should be completed by the second assessor independently of the primary assessor. Return this form to the Project Coordinator.

Deadline for completion and return: End of Exam Week 3 in the Spring Semester.

School of Physics and Astronomy Session: 2015-2016

Year 4 MPhys Project Assessment - Section F (Residential Course)

Student:	Tomas James	***Degree Programme:***	F510
Project Title:	How good is dust emission as a tracer of structure in star-forming molecular clouds?		
Supervisor:	Paul Clark		

Short report on continual assessment from Residential Course:

Mark : **/ 10**

This assessment form should be completed by or on behalf of the course moderator of the Residential Course held in Gregynog. Return this form to the Project Coordinator.

Deadline for completion and return: End of Exam Week 3 in the Spring Semester.