



Setting the Stage for Solar System Formation

Fact Sheet

Project Information

S4F

Grant agreement ID: 646908

[Project website](#)

DOI

[10.3030/646908](https://doi.org/10.3030/646908)

Project closed

EC signature date

7 May 2015

Start date

1 August 2015

End date

31 January 2021

Funded under

EXCELLENT SCIENCE - European Research Council (ERC)

Total cost

€ 1 999 659,00

EU contribution

€ 1 999 659,00

Coordinated by

KOBENHAVNS UNIVERSITET



Denmark

Objective

Low-mass stars like our Sun are formed in the centers of dark clouds of dust and gas that obscure their visible light. Deep observations at infrared and submillimeter wavelengths are uniquely suited to probe the inner regions of these young stellar objects and unravel their structures, as well as the physical and chemical processes involved. These earliest stages are particularly interesting because the properties of the deeply embedded objects reflect the star formation process itself and how it relates to its environment. It is for example during this stage that the final mass of the star and the properties of its disk – and thus ability to form planets – are determined. It is also during these stages that the first seeds for the chemical evolution of the

protoplanetary disk are planted and where some complex organic, possibly prebiotic, molecules may be formed. I here apply for an ERC Consolidator Grant that will support an ambitious program to map the physics and chemistry of the early Solar System. The proposed research program intends to use new high resolution, high sensitivity observations from the Atacama Large Millimeter Array (ALMA) - including a number of recently approved large programs – coupled to state-of-the-art radiative transfer tools and theoretical simulations to address some of the key questions concerning the physics and chemistry of the earliest stages of the Solar System: How is the chemistry of the earliest protostellar stages related to the physical structure and evolution of the young stellar object and its surrounding environment? Which complex organic molecules are present in the inner regions of low-mass protostars? What are the chances the rich chemistry of the earliest stages is incorporated into planetary systems such as our own?

Fields of science (EuroSciVoc)

[natural sciences](#) > [chemical sciences](#) > **[organic chemistry](#)**

[agricultural sciences](#) > [agriculture, forestry, and fisheries](#) > [agriculture](#) > **[grains and oilseeds](#)**

[natural sciences](#) > [physical sciences](#) > [astronomy](#) > [planetary sciences](#) > **[planets](#)**

[natural sciences](#) > [physical sciences](#) > [astronomy](#) > [planetary sciences](#) > **[comets](#)**

[natural sciences](#) > [physical sciences](#) > [astronomy](#) > [planetary sciences](#) > **[celestial mechanics](#)**



Programme(s)

[H2020-EU.1.1. - EXCELLENT SCIENCE - European Research Council \(ERC\)](#)

MAIN PROGRAMME

Topic(s)

[ERC-CoG-2014 - ERC Consolidator Grant](#)

Call for proposal

[ERC-2014-CoG](#) 

[See other projects for this call](#)

Funding Scheme

[ERC-COG - Consolidator Grant](#)

Host institution



KOBENHAVNS UNIVERSITET

Net EU contribution

€ 1 999 659,00

Total cost

€ 1 999 659,00

Address

NORREGADE 10

1165 Kobenhavn

 Denmark 

Region

Danmark > Hovedstaden > Byen København

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Beneficiaries (1)



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European Union, 2025