ASTROMANIA

The Astronomy Card Game

Rule Booklet

What's in Astromania?

Cards (99)

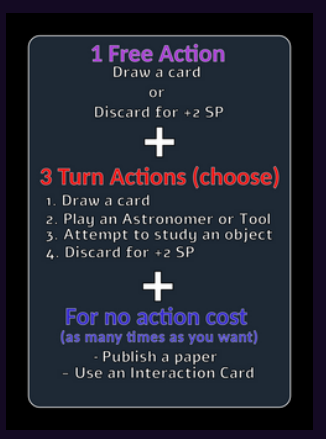
Astronomer Cards (18)

Tool Cards (15)

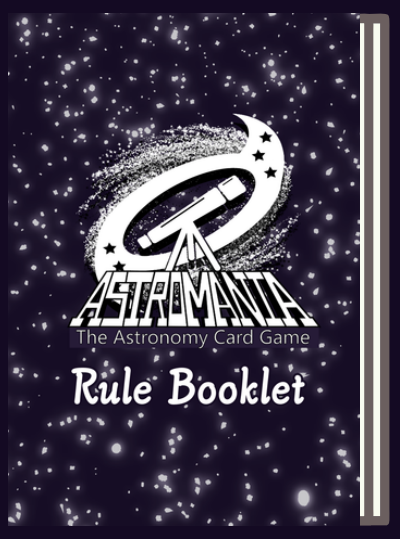
Interact Cards (14)

Prompt Cards (18)

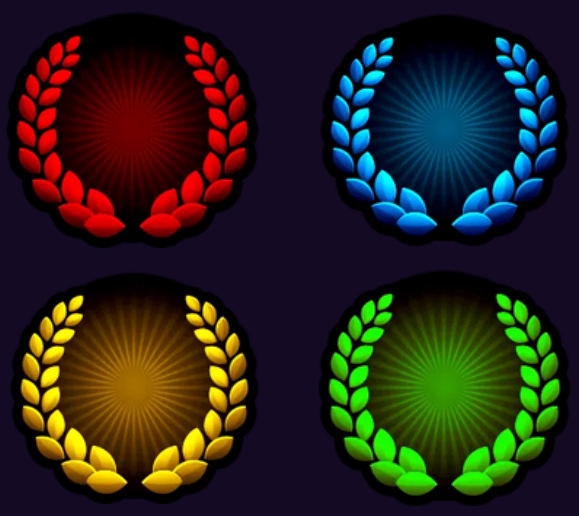
Object Cards (30)



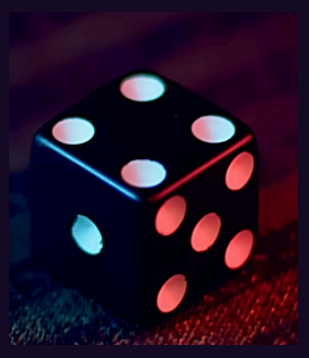
Reference Cards (4)



1 Rulebook (1)



Counters



Dice (2)

Welcome, researcher!

Congratulations on making it to graduate school! You have been presented with the opportunity to contribute to professional astronomy research. You'll be studying objects in space by collaborating with other astronomers, using cool new telescopes and tools, and get a chance to publish your work in the prestigious Astromania journal.

Here is what you will need for your research:

Draw Deck:

Draw cards from this deck to add to your hand.

Sky Deck:

This deck has Objects for you to study. Add cards to Starboard from here.

Prompt Deck:

This deck has Prompts you work towards clearing. Draw one at the start of the game.

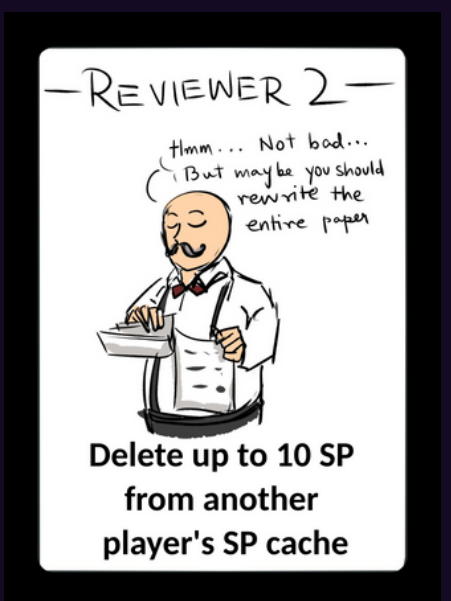
The **Draw Deck**, where you draw cards from for your hand, has three types of cards:

Astronomers

These are your colleagues and collaborators. They will help you operate Tools.

Tools

This is the equipment you use or codes you run.



Interact

This helps you interact with your fellow graduate students (other players).

The **Sky Deck** has Objects you can study

And the **Prompt Deck** has suggestions for papers you can publish for a successful research career.

Game Setup

Follow these steps for setting up your game :

1. Split the cards into their appropriate decks by their back color and shuffle all 3 decks.
2. Distribute a random **Prompt** card to each player.
3. Each player draws 5 cards from the **Draw Deck** as their starting hand.
4. Place 9 **Object** cards from the **Sky Deck** in a 3x3 grid. We'll call this the **Starboard**.
5. Determine who goes first. **Turn order proceeds clockwise from the first player.**

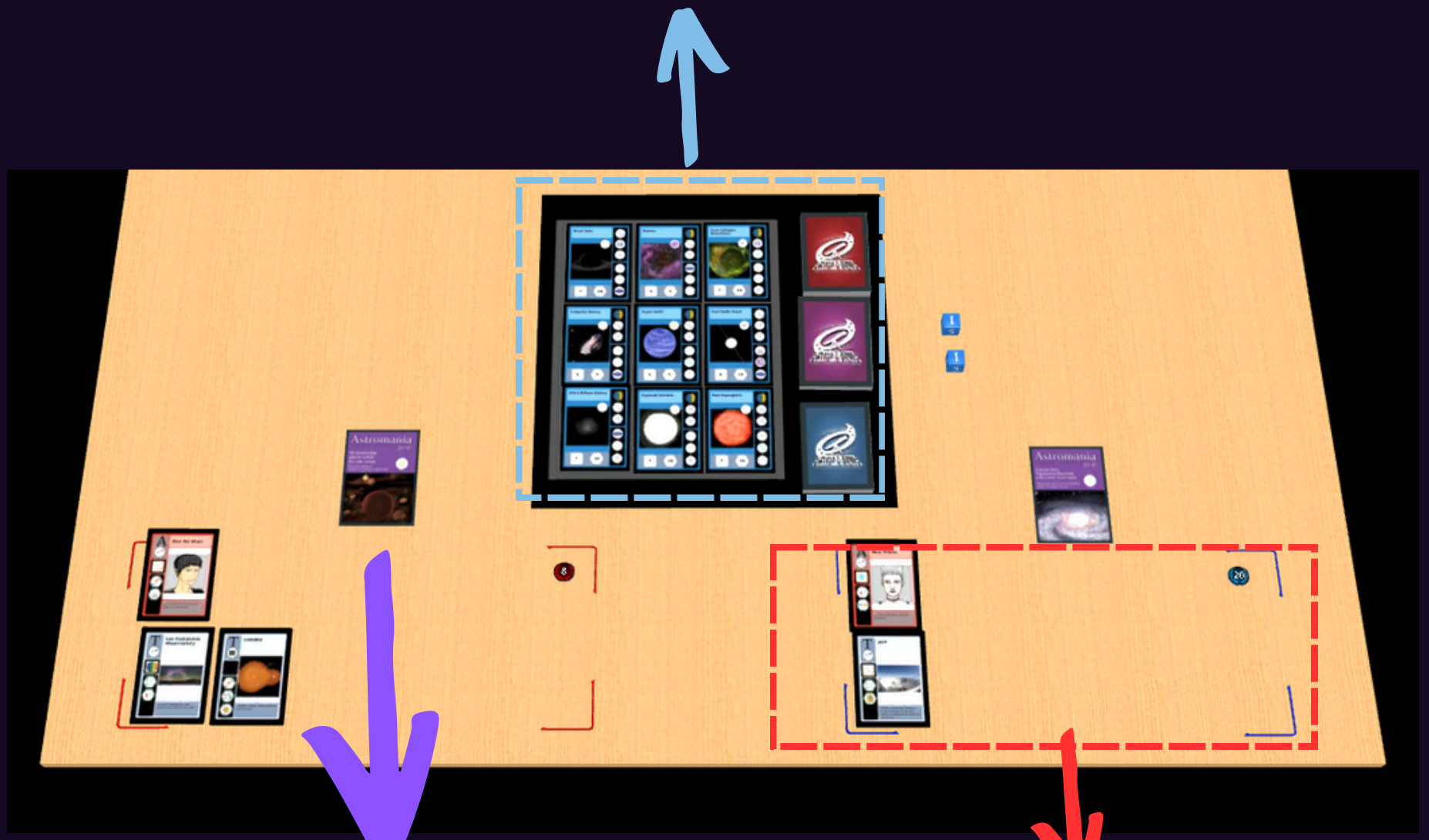
This can be done in any way you choose. You may decide that whoever was the last person to see a shooting star or whoever has the next birthday goes first. We suggest each player take a turn rolling the dice and the player with the highest sum on the dice goes first.

Optional: Remove all the Interact cards from the Draw Deck for solo play!

Game Layout

This is what your typical research space will look like in the the middle of a study (mid-game):

Starboard



Player Prompts

Player Field

This is simply the space in front of a player where they can play astronomer and tool cards

As an astronomer, your career's success relies on studying objects in the sky and publishing papers!

In Astromania, you can do this by combining the Tool and Astronomer cards on your Player Field and studying an Object on the **Starboard** to gain **Science Points (SP)**.

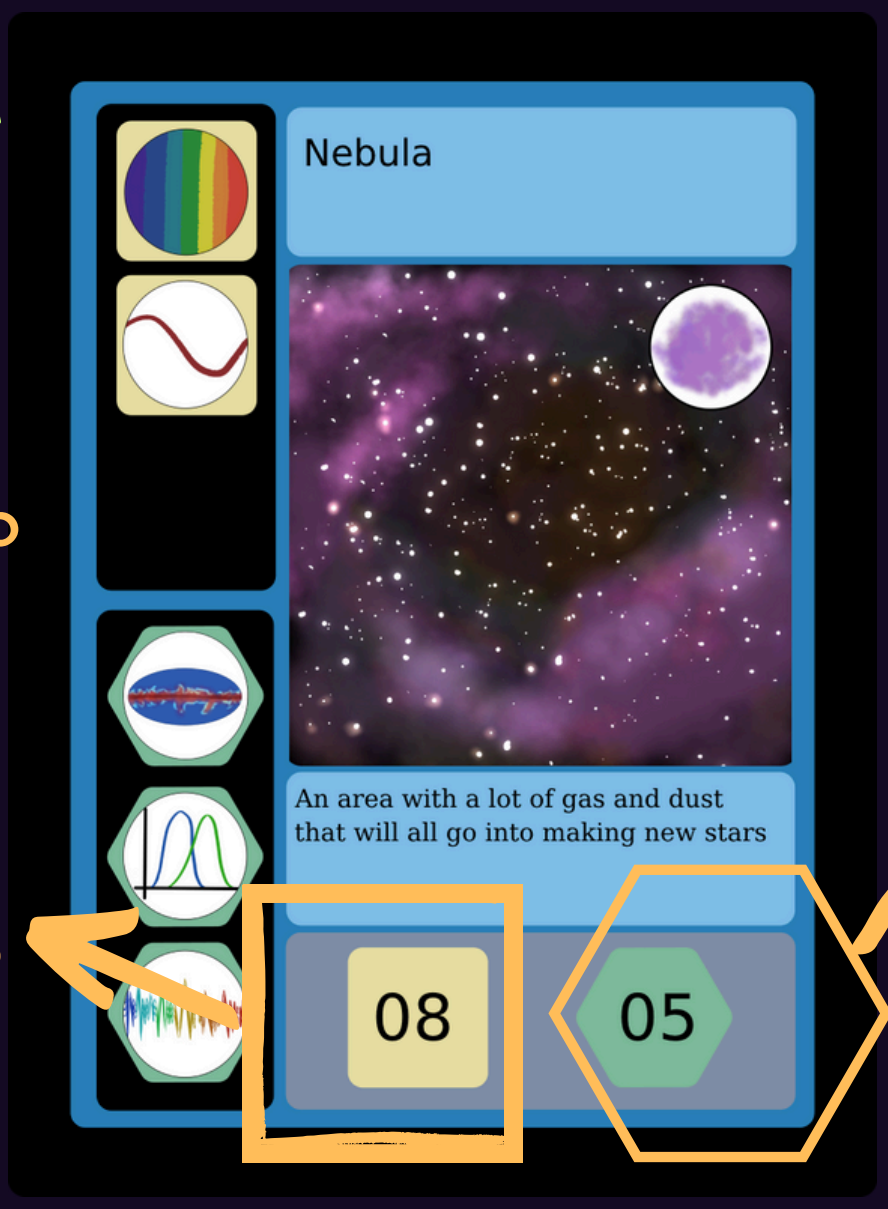
To initiate an observation, you MUST have played an Astronomer AND a Tool in your Player Field — the space in front of you.

You may use the combination of one Astronomer and one Tool (both in your Field) to try 'studying' an Object by rolling dice. If you roll the number in the square, or higher, you have successfully studied the Object and get **Science Points (SP)**.

****Once an astronomer is used for a 'study', you may NOT use it again in the same turn, regardless of the success or failure of the previous study attempt. ****

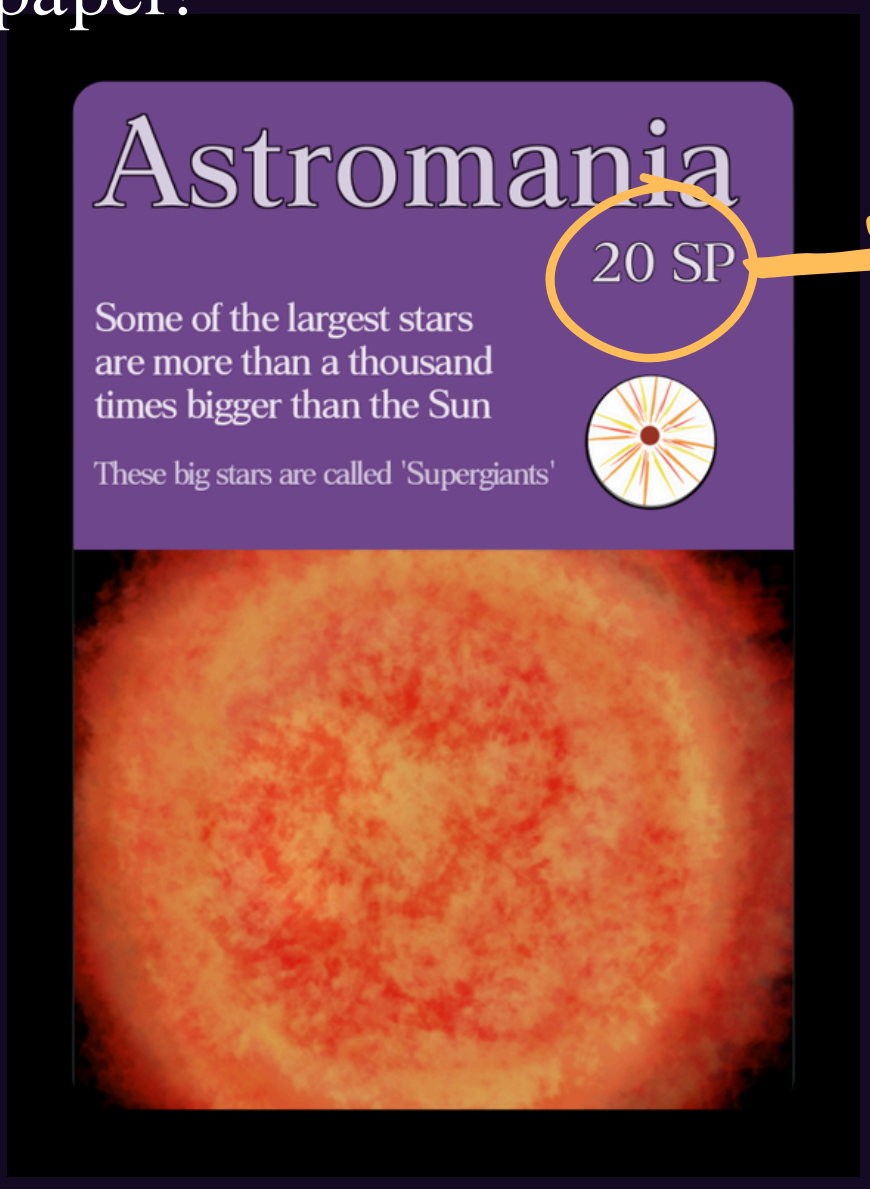
For more information on the icons, see Bonuses and Glossary!

You need to roll this number or higher to successfully study this Object



You get this many Science Points if you successfully study this Object

Collect enough SP to ‘publish’ your **Prompt** card as a paper!

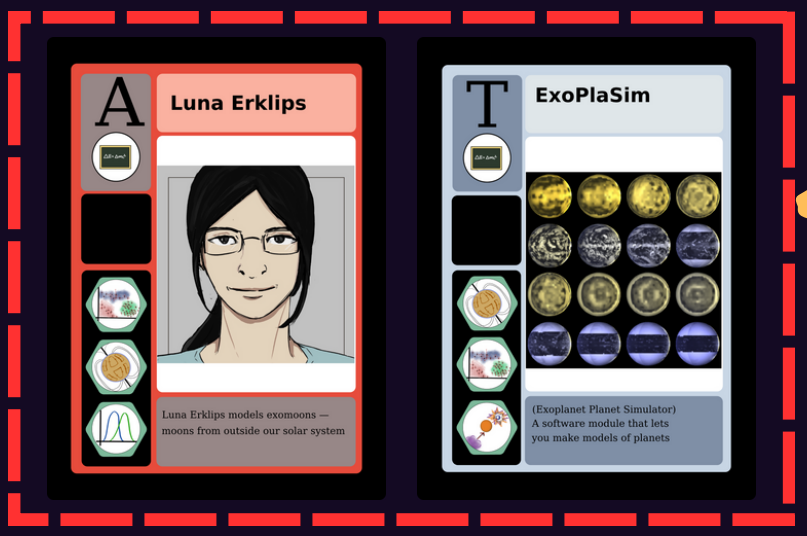


Every Prompt card requires 20 SP to become a published paper

Managing the Player Field

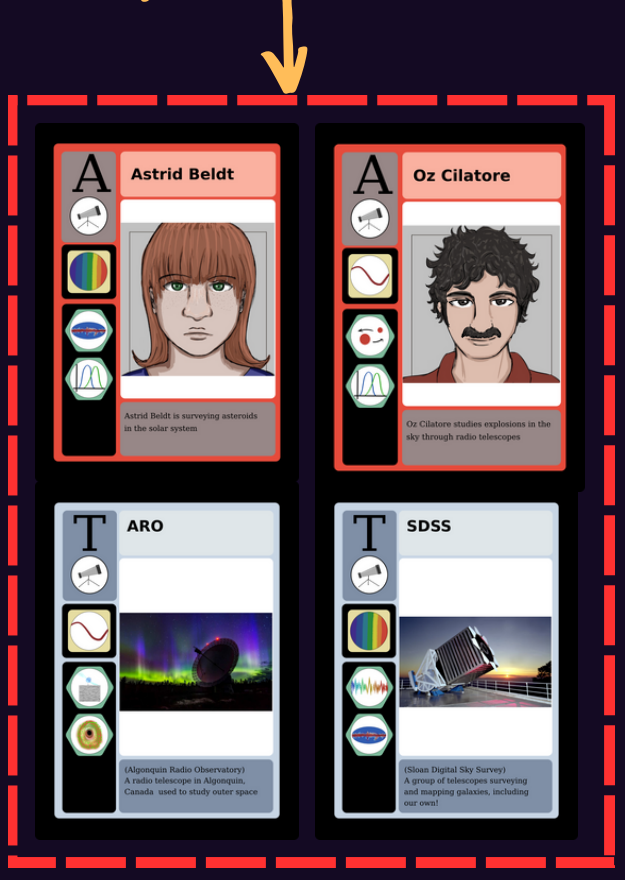
The maximum size of a Player Field depends on how many papers that player has published.

A player begins with a field limit of 1 Astronomer + 1 Tool. For each paper that the player publishes, their field limit increases by 1 Astronomer and 1 Tool.

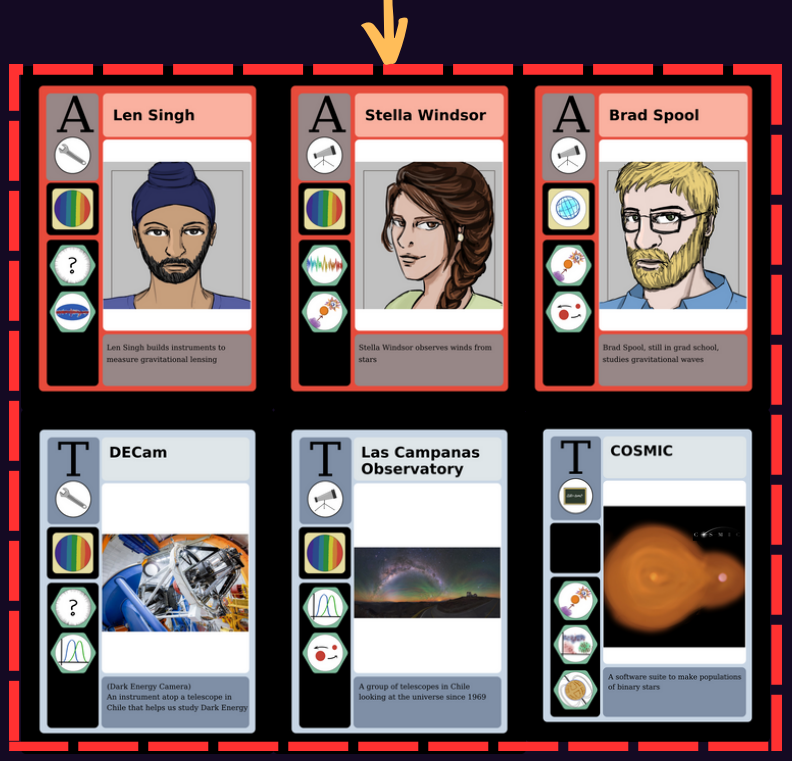


Maximum capacity for player with no papers published

Maximum capacity for player with one paper published



Maximum capacity for player with two papers published



Interact Cards

Interact cards are part of the Draw Deck but they are different from the Tool and Astronomer cards. They *don't* go on a Player Field and do not directly help you study an Object.

Instead, they have instructions written on them that benefit you in some way.

Gameplay

You now know most of how the game works. So let's start playing!

Turn Actions

On their turn, a player can take up to 3 turn actions plus one free action.

Once per turn, a player may do one of the following as a free action (does not count towards your 3 turn actions):

- Draw only one card from the **Draw Deck**
- Discard only one card in their hand or player field and gain +2 SP

At the cost of one turn action, a player may do any one of the following:

- Draw a card from the **Draw Deck**
- Play one astronomer or tool card on your field
- Use one Astronomer card and one Tool card in your field to attempt to study an object on the **Starboard**
- Discard one card in their hand or field and gain +2 SP.

Publishing a Paper

When a player has the required SP to fulfill their Prompt (20 SP listed on the **Prompt** Card), they can publish a paper! A player must publish on their turn, but publishing does not require using an action.

To publish: Object cards in a player's SP cache are worth the amount of SP listed in the hexagon. A player must trade in enough Object cards and SP tokens to fulfill the Prompt (See Page 14 for info on SP tokens)

If an Object being traded in has the same class icon as the Prompt, then the Object is worth an additional 1 SP towards that Prompt (See Page 14 for info on SP bonuses)

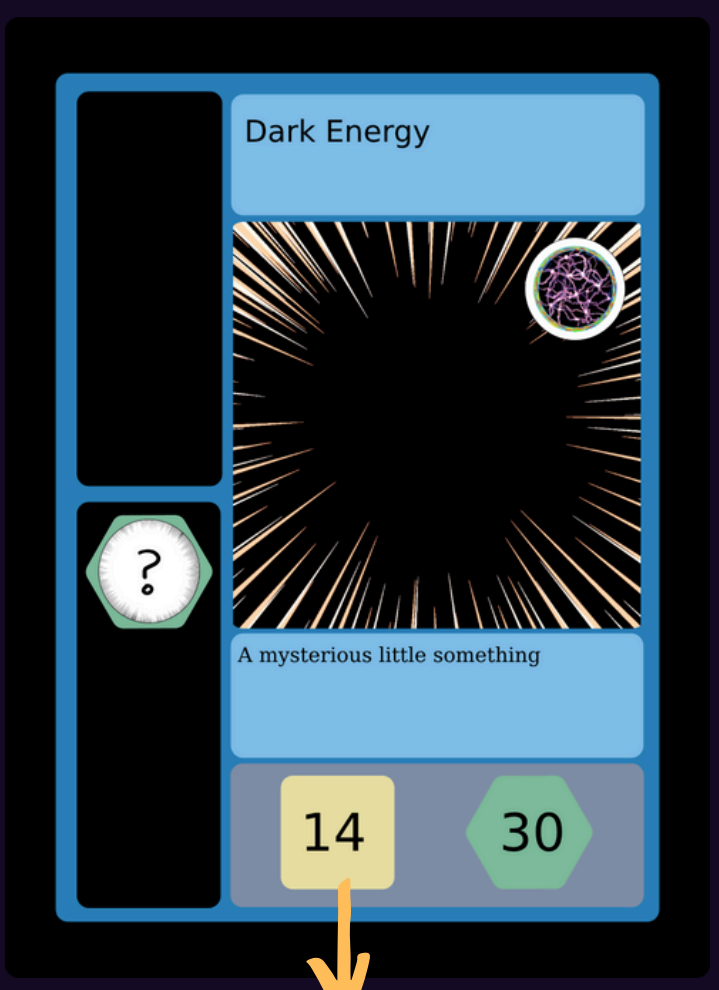
If the value of the SP being traded in is greater than the value required to publish, the player receives SP tokens representing the difference.

The used objects then go into the Sky Deck discard pile. The player then selects another random Prompt from the Prompt deck, unless it is their third publication... (See Page 15)

Bonuses

Roll required to get SP

Some Objects are high risk, high reward. As in you need a high roll to study them, but they give you a lot of SP too!



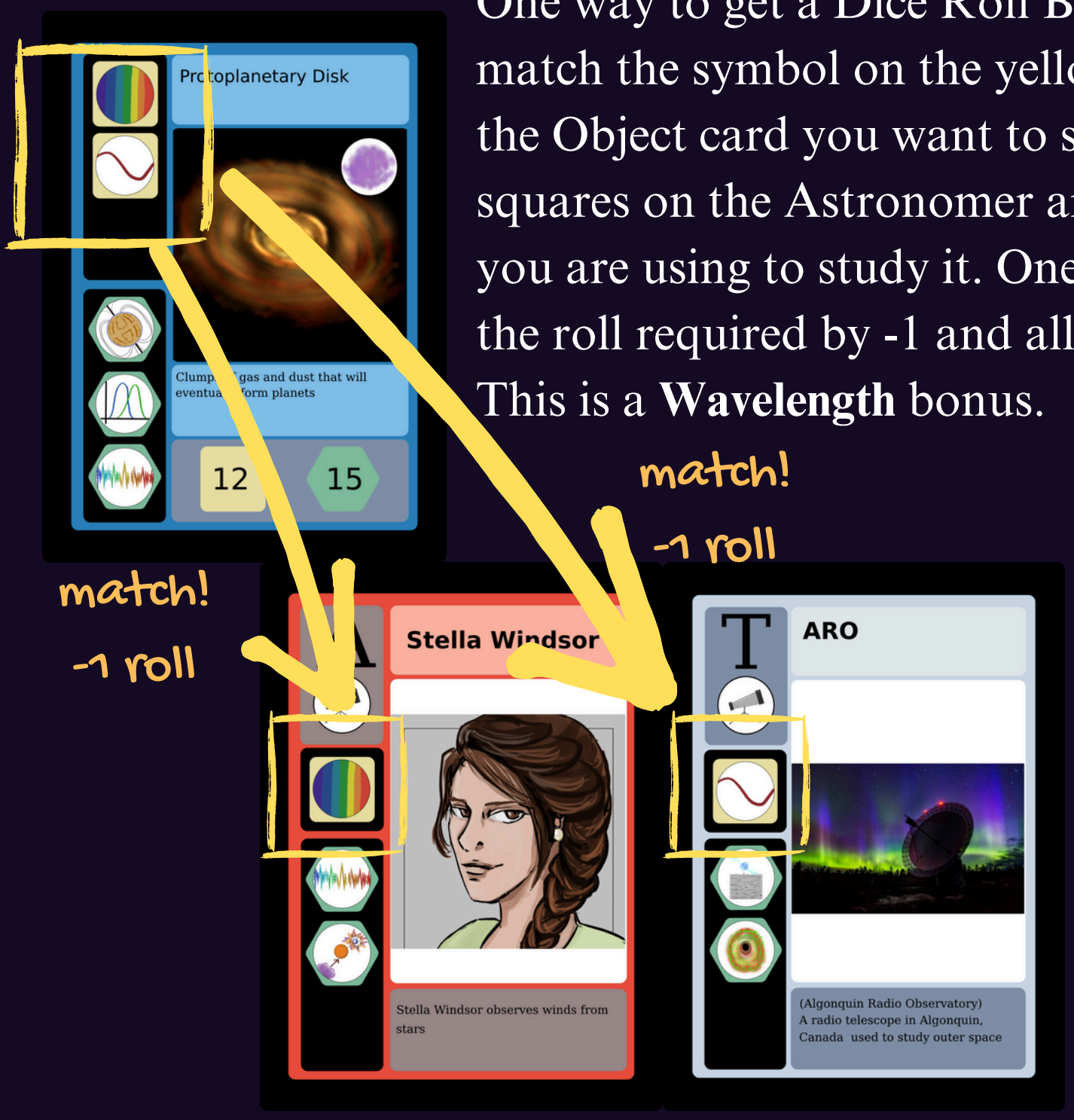
Roll required to get SP

While some are literally impossible to study! How can one roll a 14 on two 6-sided dice? These **require** the use of in-game bonuses

You can get two kinds of bonuses :

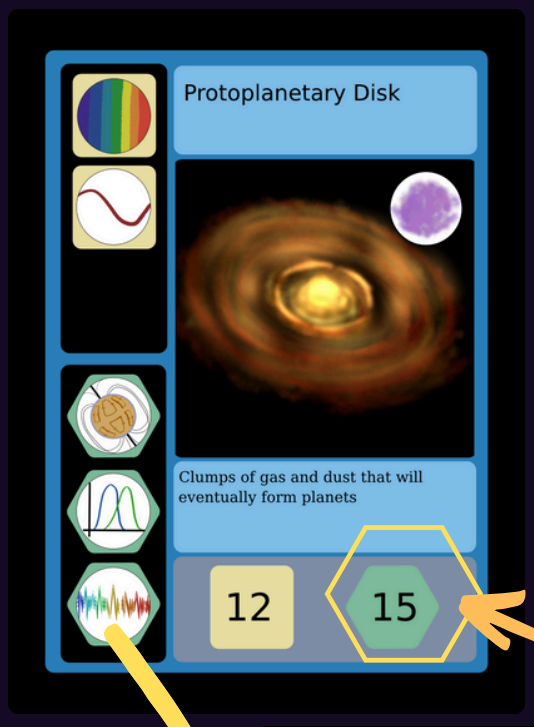
1. **Dice Roll Bonus** : This lowers the dice roll you need to study an object by -1 per bonus.
2. **SP Bonus** : This increases the SP you get from studying an object by +1 SP per bonus.

One way to get a Dice Roll Bonus is to match the symbol on the yellow square on the Object card you want to study to the squares on the Astronomer and/or Tool card you are using to study it. One match lowers the roll required by -1 and all bonuses stack. This is a **Wavelength** bonus.



Another way to get a Dice Roll Bonus is to match the icons in the circles of the astronomer and tool card. This bonus doesn't depend on the object card! Any object you try to study will have its required dice roll lowered by 1 if you get this match.

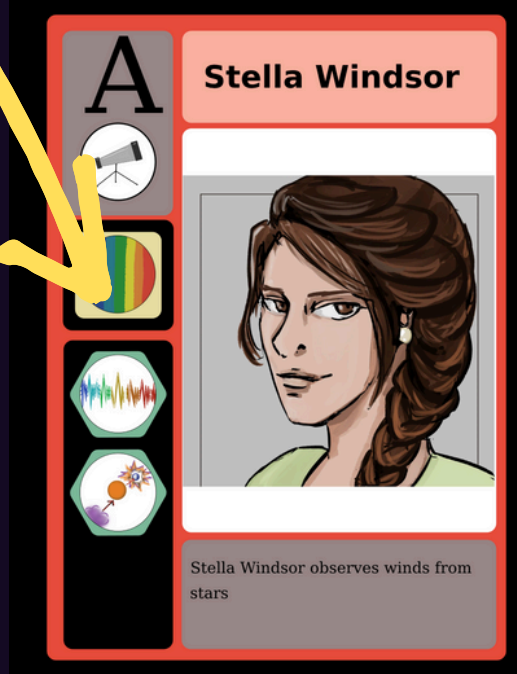
SP Bonuses are calculated after a successful study of an Object. These add on to the inherent SP of the Object, the number in the green hexagon at the bottom of the card.



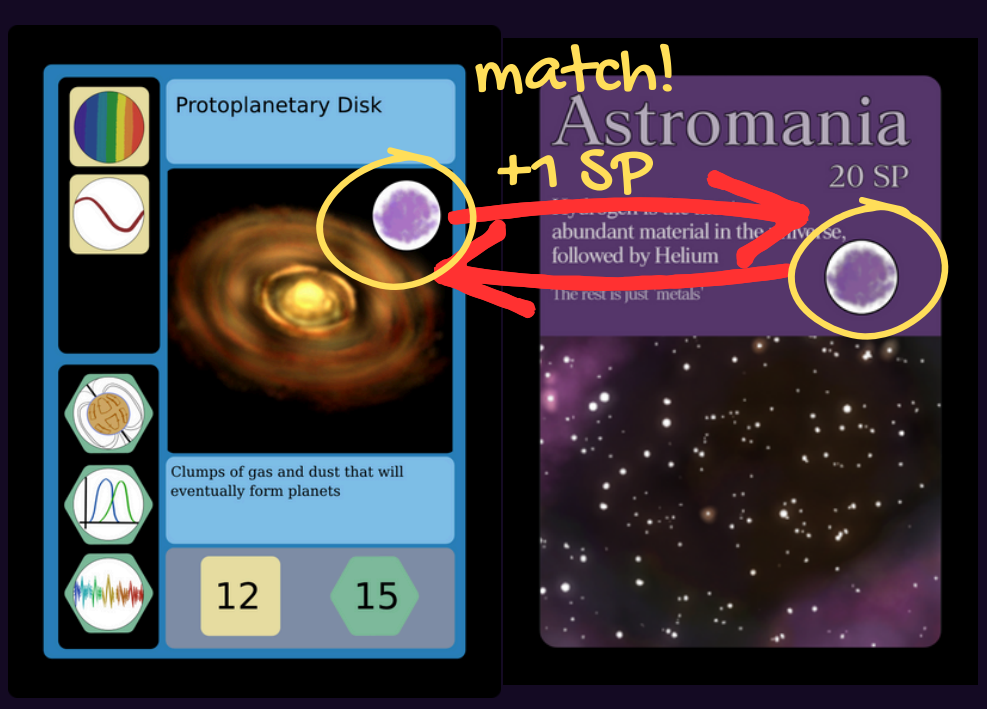
One can match the symbols in the green hexagons on the left side of the Object card to the left side of the Tool and/or Astronomer cards to get more SP. Each match is worth +1 SP and bonuses stack up! This is a **Technique** bonus.

Any SP bonus will add on to this

match! +1 SP



For more information on the icons, see Glossary!



Another way to get a SP Bonus is to match the icons in the circles of the Object and **Prompt** card. This bonus doesn't depend on the player field!

Use these tokens to keep track of your SP bonuses!

Win Condition

The first player to publish 3 (three) papers wins and successfully receives their PhD in Astronomy*!

🎉🎉🎉

Keep in mind -

- If an Object being traded in has the same class icon as the Prompt, then the Object is worth an additional 1 SP towards that prompt (see Bonuses).

- If the value of the SP being traded in is greater than the value required to publish, the player receives SP tokens representing the difference.

- A player must publish on their turn, but publishing does not require using an action.

*!!! We do not have the authority to reward real PhDs !!!

Icon Glossary

Astronomer - Tool Classes

Class of astronomers that use telescopes to do their work. Symbol also on telescopes.

Class of astronomers that use modelling or pen-paper math to do their work. Symbol also on codes and software instruments

Class of astronomers that build equipment to be used in telescopes. Symbol also used on tools that are standalone instruments

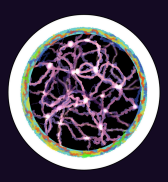
Object - Prompt Classes

Class of objects that are part of the space between stars or the Interstellar Medium (ISM). Symbol also on Prompts related to the ISM.

Class of objects that are violent explosions of some sort. Symbol also on Prompts related to violent explosions.

Class of objects that are galaxies. Symbol also on Prompts related to galaxies.

Class of objects that are planets. Symbol also on Prompts related to planets.



Class of objects that hold information about cosmology - study of the past, present, and future of our universe. Symbol also on Prompts related to cosmology.

Class of objects that are stars. Symbol also on Prompts related to stars.

Icon Glossary

Wavelength

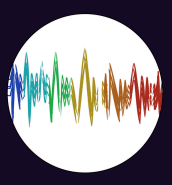
Denotes the light emitted by the highest energy events in the universe. Symbol also on astronomers who study it and tools that can detect it.

Used for objects that emit light humans can see. Symbol also on astronomers who study it and tools that can detect it.

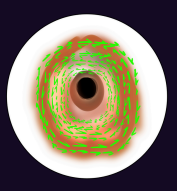
Denotes the light that has low energy but can travel very, very far. Symbol also on astronomers who study it and tools that can detect it.

Used for objects that can be studied using things other than light. Symbol also on astronomers who study it and tools that can detect it.

Technique

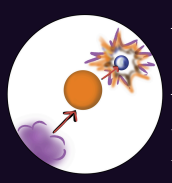


A technique called Spectroscopy. Astronomers use it to see what objects in space are made of.

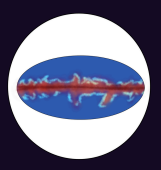


A technique called Polarimetry. Astronomers use it to learn how charged the light from an object is.

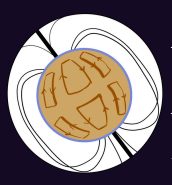
A technique called Astrometry. Astronomers use it to see how objects in space move



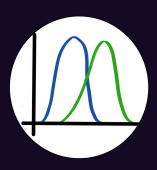
A technique called Time Domain Astronomy. Astronomers use it to learn how an object changes with time.



A technique called All Sky Map. Astronomers use it to see where in the universe the object is.

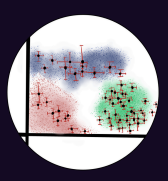


A technique called Hydrodynamics. Astronomers use it to learn how things flow within an object.

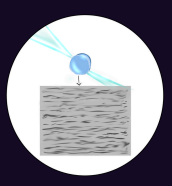


A technique called Photometry. Astronomers use it to study the light an object emits or reflects.

A special technique just for the study of an exotic thing called Dark Energy



A technique called Population Study. Astronomers use it to learn how certain objects behave when in groups.



A technique called Scintillometry. Astronomers use it to study how light from far away things distorts as it travels through material

About This Project

In June 2022, we made some trading cards to highlight the contributions of queer astronomers for a Toronto-based outreach program. But if you already have a deck of fancy cards, why not make a whole game out of it? Astromania is the card game equivalent of real-life astronomy research. With its assortment of cards, Astromania lets you strategize and combine techniques to solve the mysteries of the universe - just like a real astrophysicist! Our team is composed of graduate students who are all working towards a Ph.D. in astronomy and are actively involved in ongoing astronomy research.

Astronomy isn't always just taking pictures of black holes and distant galaxies. It's a field made of many people using different methods to study the past, present, and future of our universe. Sometimes we need to craft simulations to test our theories. Sometimes we need to write some code to calculate important statistics. Sometimes we're caught up in the political machine that is academia. It's not always pretty and an important part of success is luck. Things don't always work the way you expect so we hope we accurately convey the nuances of the scientific research process in our game.

Learn more about Astromania on our website:
https://astromania-game.github.io

This game is neither affiliated with nor sponsored by any of the organizations featured on our Tool cards.

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Carnegie Mellon University Physics and

UNIVERSITY OF TORONTO | DUNLAP INSTITUTE for ASTRONOMY & ASTROPHYSICS

We also thank all our consultants, playtesters, and the larger astronomy community for the positive support and feedback we received, with a special shoutout to those who let us feature their tools on our cards!