Here’s a structured and cleaned-up summary of the text you provided, keeping the key points, rules, and scientific context intact, organized for clarity:

Planetarium Game Rules & Overview

Starting the Game

- After setup, players take turns until the game ends (see page 10).
- The first player is the one who discarded the highest-scoring final evolution card during setup.
- Ties for the first player are resolved randomly.

Turn Summary

1. **Move a Token**
    - Move one token (planet or matter) one space.
2. **Play a Card (if possible)**
    - Only one card (low or high evolution) can be played per turn.
    - Requirements must be met to play a card.
3. **Draw a Card**
    - If a card was played: draw either one low evolution card, one high evolution card, or two final evolution cards and keep one.

Tip: Players may skip playing a card if unable or unwilling to meet requirements.

“I can calculate the motion of heavenly bodies, but not the madness of people.” — Isaac Newton

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Moving Tokens

- **Direction:** Tokens always move clockwise.
- **Movement:** Move along lines on the board; thicker circular orbits or connecting lines.
- **Restrictions:**
    - Matter tokens cannot move through other matter tokens.
    - Matter tokens can share space with planet tokens; they are then stored on the player’s mat.
- **Special Planet Moves:**
    - Planets can “sweep out their orbit,” moving along a thick orbit as far as desired until hitting a matter token.
    - Planets may move through other planets but cannot end on the same space.

Playing Cards

- **Types:** Low, High, and Final Evolution Cards
- **Final Cards:** Only playable on a player's final turn.
- **Requirements:**
  - Matter tokens (placed on player mat)
  - Planet characteristics (e.g., terrestrial, gaseous, orbit number)
  - Habitable/hostile status
  - Player markers on the planet

Placing Cards:

- Place along the board edge for the corresponding planet.
- Place a player marker on the card.
- Score points in the hexagon on the card.
- Check and update the planet's habitable/hostile status after scoring.

Special Icons

- **Gravity:** Move one matter token from anywhere to any planet on your mat.
- **Downgrade:** Discard the card to draw a low evolution card; cannot play another card this turn.

Drawing Cards

- **Hand Size:** Always 5 cards; max 4 final evolution cards.
- **Discard:** Final evolution and downgraded high evolution cards go to separate discard piles.
- **Deck Depletion:** If a deck runs out, those cards cannot be drawn until reshuffled.

Tip for First-Time Players: Keep ~2 final evolution cards for endgame planning.

Final Stages

- **Acceleration:** Triggered when matter tokens reach a specific evolution track space; tokens can move 1–2 spaces.
- **Final Turn:**
  - Player may play normal and final evolution cards.
  - Must have player markers on the planet to play final cards.
  - Maximum of 4 final cards per player.

Winning the Game:

- Most points win.
- Ties broken by:

1. Most matter tokens remaining
2. Most player markers remaining
3. Fewest cards in hand

Solo Variant

- Uses 6-sided dice to simulate other players and gravity.
- Target score initially set to 100 (adjustable).
- Dice determine planet movement (2–7 move planets on corresponding or lower orbits; 8+ no movement).
- Matter tokens collected reduce target score by 2 each.
- Game ends when a matter token reaches the final evolution track space.
- Play final turn and compare score with target to determine win.

Scientific Background: Solar System Formation

1. **Origin of the Solar System**
   - ~5 billion years ago, no solar system existed.
   - Material compressed in giant molecular clouds (stellar nurseries).
   - Nearby supernova triggered gravitational collapse.
   - Accretion disk formed around the protostar, creating planets, moons, asteroids, comets.
2. **Material Composition**
   - Dust and gas heated; some vaporized.
   - Calcium-aluminum-rich inclusions: oldest solids (~4.56 billion years old).
   - Formation of rock-forming minerals: olivine, pyroxene, iron.
   - Ices (O, C, N) formed in outer solar system → icy planets, dwarf planets.
3. **Planet Formation**
   - Outer Solar System: large cores → gas giants and ice giants.
   - Inner Solar System: planetesimals → planetary embryos → terrestrial planets.
   - Jupiter's gravity shaped asteroid belt.

The Search for Life

- Life is statistically likely in the universe.
- Mars explored for habitability and past life:
  - Mariner 4 (1965): harsh conditions, thin CO_2 atmosphere, no magnetic field.
  - Mariner 9 (1971): discovered dust storms, volcanoes, river channels, Valles Marineris.
- Evidence suggests Mars had flowing water and volcanism, hinting at potential past life.

“Planetarium lets players steer solar system formation and possibly create habitable planets.” — Dante Lauretta, University of Arizona

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If you want, I can also create a **visual cheat sheet for Planetarium gameplay**, showing **turn order, token movement, card types, and scoring** in one compact page for easy reference.

Do you want me to do that next?