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*

**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 CO₂ 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*

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?