**Astronomy 101 Project: Analysis** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Synodic Period Estimate 1 - Phases**:

|  |  |
| --- | --- |
| first quarter Moon, date 1 |  |
| first quarter Moon, date 2 |  |
| **Estimate #1: days elapsed between phases** |  |

**Synodic Period Estimate 2 - Rise Times**:

|  |  |  |
| --- | --- | --- |
| Week | chosen observation date | estimated rise time |
| Week 1 |  |  |
| Week 2 |  |  |
| Week 3 |  |  |
| Week 4 |  |  |
| Week 5 |  |  |
| Week 6 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| observations | number of days | rise time difference (minutes) | rise time change per day (minutes/day) |
| 1 and 2 |  |  |  |
| 2 and 3 |  |  |  |
| 3 and 4 |  |  |  |
| 4 and 5 |  |  |  |
| 5 and 6 |  |  |  |

|  |  |
| --- | --- |
| average rise time change per day (min/day) |  |
| **Estimate #2: days to change rise time by 1,440 min.** |  |

**Synodic Period Estimate 3 – Stellarium**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| New Phase | date | time |  | **Estimate #3: Stellarium** |
| date 1 |  |  |  | Time elapsed (days, minutes) |
| date 2 |  |  |  |  |

**STOP! Have your lab instructor approve your work. Initials: \_\_\_\_\_\_**

**Estimates Converted to Minutes:**

|  |  |
| --- | --- |
| Synodic Period | Converted to minutes |
| Actual Synodic Period: 29.5306 days |  |
| Synodic Period Estimate #1: Phases |  |
| Synodic Period Estimate #2: Rise Times |  |
| Synodic Period Estimate #3: Stellarium |  |

|  |  |
| --- | --- |
| Synodic Period Error | **Percent Error** |
| **Error For Estimate #1** |  |
| **Error For Estimate #2** |  |
| **Error For Estimate #3** |  |

**List all the constellations traversed by the Moon during the six weeks of observations:**

**Sidereal Period Calculations:**

Use the first five constellations the Moon entered during the six weeks of observations.

|  |  |  |  |
| --- | --- | --- | --- |
| Entered Constellation | Date 1 | Date 2 | Sidereal Period |
| Sagittarius |  |  |  |
| Capricornus |  |  |  |
| Aquarius |  |  |  |
| Pisces |  |  |  |
| Aries |  |  |  |
| **Average Sidereal Period** | | |  |
| **Actual Sidereal Period** | | | 27.322 days |
| **Percent Error** | | |  |