The primary goals of Approach Phase are to optically acquire Bennu from approximately 2 million km away, to collect imagery to begin deriving the first shape model (75 cm), the coordinate system and Bennu’s spin state, and to search the space immediately surrounding Bennu for dust/gas plumes and natural satellites.

### Approach Phase

**Approach Phase Begins**: 
- **Start Date**: [Specific Date]
- **End Date**: [Specific Date]

**Primary Goals**:
- Optically acquire Bennu from approximately 2 million km away.
- Collect imagery to begin deriving the first shape model (75 cm).
- Derive the coordinate system and Bennu’s spin state.
- Search the space immediately surrounding Bennu for dust/gas plumes and natural satellites.

**Key Events**:
- **Full-Rotated Image**: Collect full-rotated images to 180° to derive the thermal inertia and the Yarkovsky model.
- **Phase Function Observations**: Collect phase function photometry at different near-infrared wavelengths.
- **Microwave Emission**: Measure the emissivity of Bennu at different wavelengths.
- **Light Curve Observations**: Monitor the brightness changes of Bennu over time.
- **Radar Altimetry**: Use radar to measure the surface topography of Bennu.

**Data Products**:
- **Phase Function Models**: Derive the phase function models from the photometry data.
- **Thermal Emissivity**: Measure the thermal emissivity of Bennu.
- **Radar Altimetry Data**: Derive the surface topography of Bennu.
- **Light Curve Data**: Monitor the brightness changes of Bennu over time.

**Key Dates**:
- **Sept 27, Oct 16**: Full Rotation Phase Function
- **Oct 2 - Nov 9**: Daily Phase Function
- **Nov 2, 3, 5, 9**: Full-Disk Integrated Spectroscopy Observations
- **Nov 7, 8**: OVIS Rotationally Resolved Mineral/Chemical Parameter Strength, Rotationally Resolved Albedo, Rotationally Resolved Spectral Parameters
- **Nov 12, 13, 16, 19, 23, 25, 27, 29, Dec 1, 2**: PolyCam & MapCam
- **Dec 3**: BENNU ARRIVAL

**Contingency Maneuvers**:
- **AAM-1**: [Description]
- **AAM-2**: [Description]
- **AAM-3**: [Description]

**Key Systems**:
- **TAGSAM**: [Function]
- **MAPCAM**: [Function]
- **OVIRS**: [Function]
- **OTES**: [Function]

**Supporting Systems**:
- **ACS Thrusters**: [Function]
- **TTC Thrusters**: [Function]
- **AMS**: [Function]