SECTION 14

Anti-Gravitation Deep Space Drive

A GRAVITATION DEFLECTOR SPACECRAFT DEEP SPACE DRIVE

A spacecraft gravitation deflector drive would be a deflector in cup form, mounted on the rear of the spacecraft and extending the spacecraft's full length to the nose, as in Figure 14-19 below, with engineered arrangements for varying the amount of deflection [crystal tilt angle].

Figure 14-1
A Gravitation Deflector Driven Spacecraft

This configuration would satisfy a number of functions. The deflector would provide [all without use of fuel]:

- Launching of the spacecraft vertically upward at an upward acceleration of approximately one-half of local natural gravitation, for Earth an acceleration of about $16.1\ ft/s2$;
- Landing and re-launching of the spacecraft at any gravitating body such as the Moon or Mars;
- Deep space transit propulsion between gravitating bodies;
- Protection from deep space radiation and cosmic ray particles by virtue of the ½ to 1 meter thickness of the Silicon deflector;
- A gravity environment within the spacecraft of zero natural gravitation plus an artificial gravitation due to the acceleration of the ship in whatever amount that it is at any particular time [taking "down" as toward the deflector end of the ship].

The engineered arrangements for varying the amount of deflection so as to vary the acceleration would be means of controlled changing of the orientation of selected portions of the Silicon cubic crystals so that they fail to provide the comprehensive deflection of all incoming vertical rays of *Flow*. The engineered arrangements for varying the direction or orientation of the spacecraft would be a 3-axis system of angular momentum wheels

For a spaceship in free space the gravitational *Flow* environment is different from on Earth. In the case of only one gravitation source near enough to be of any important effect and that sole source at a considerable distance from the spaceship, the gravitational *Flow* from that source to the spaceship is essentially all parallel rays. Departing such a source after launch from it requires simply aiming the stern of the ship toward that source. Controlled landing on it requires simply aiming the stern of the ship toward that source and controlling the acceleration by varying the deflection.

In general, however, in deep inter-planetary space gravitation is present albeit fairly weekly because of inverse square reduction of intensity, and it is present in various amounts with attraction toward various differently located sources. As with sailing navigation using the wind as in earlier centuries, spaceship travel within the Solar System may require techniques analogous to: sail craft's tacking on various headings, "crabbing" into partial "cross wind" as aircraft do, and in general going "where the winds permit". In the spacecraft case the "winds" are the various direction gravitational *Flow*s available from which to generate acceleration and to which the spacecraft is subject to attraction.

Solar System navigation is further complicated by the destination's continuous motion. The navigation must be toward where the destination will be upon spacecraft arrival at it as compared to where the destination currently is.

For inter-stellar navigation there is the possibility of near light speed travel. The deflector could provide continuous, fuel-less acceleration to the spacecraft throughout its trip. The continuous acceleration would accelerate the craft during the first part and, with the craft re-oriented using the 3-axis system of angular momentum wheels, decelerate the craft for approach to the destination.

Because the acceleration is independent of the mass of the spacecraft it could be quite large and able to carry everything needed for an extended trip and for survival at the destination. The relatively narrow form of the spacecraft is chosen in Figure 14-1 because it provides better shielding against deep space radiation and cosmic rays. A different shape might be chosen for a quite large spacecraft: a single storey flat disk or a wide multi-storey cylinder.