Catalogue of Asteroid Polarization Curves
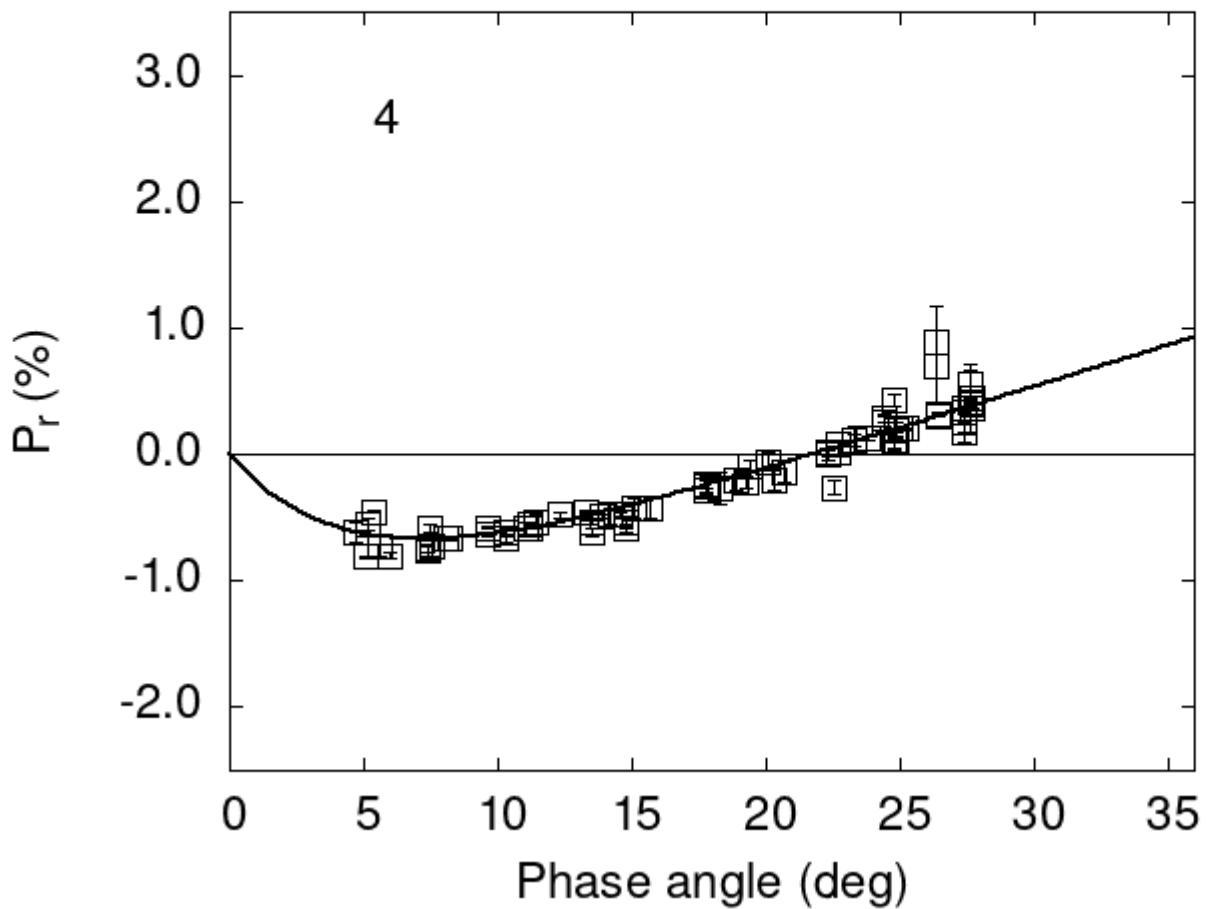
Gil-Hutton (2023)

Polarimetric data:

The columns list the object number, the phase angle (degrees), P_r (%), its error, the filter used, and the reference code.

```
4   4.69 -0.61 0.08 V f
4 14.21 -0.48 0.08 V f
4 15.05 -0.43 0.08 V f
4 15.70 -0.43 0.08 V f
4 18.90 -0.20 0.09 V f
4 20.29 -0.20 0.08 V f
```

```
4 20.68 -0.14 0.08 V f
4 27.39  0.26 0.08 V f
4 27.41  0.17 0.08 V f
4 27.43  0.36 0.10 V f
4 22.32  0.02 0.03 V f
4 22.32  0.00 0.04 R f
4 22.74  0.02 0.04 V f
4 22.74  0.08 0.02 R f
4 22.58 -0.26 0.05 V a
4 19.41 -0.09 0.05 V a
4 17.75 -0.25 0.05 V a
4  5.13 -0.55 0.05 V a
4 11.07 -0.58 0.05 V a
4 11.42 -0.53 0.05 V a
4 24.81  0.43 0.05 O a
4 24.83  0.09 0.05 V a
4 24.83  0.10 0.05 O a
4 14.76 -0.54 0.05 O a
4 14.78 -0.59 0.03 G a
4 13.50 -0.62 0.03 O a
4 13.52 -0.53 0.02 G a
4 23.32  0.11 0.05 G a
4 23.29  0.12 0.10 G a
4 20.12 -0.06 0.07 G a
4 19.24 -0.22 0.04 G a
4 17.77 -0.24 0.07 G a
4 18.29 -0.27 0.13 G a
4 23.83  0.13 0.02 G a
4 24.84  0.19 0.06 G a
4 24.84  0.21 0.04 G a
4 17.81 -0.29 0.02 G a
4  5.58 -0.72 0.08 R a
4  5.05 -0.81 0.01 R a
4  5.95 -0.80 0.02 O a
4  7.55 -0.73 0.07 R a
4 24.87  0.12 0.02 R a
4 25.04  0.20 0.01 R a
4 25.21  0.20 0.01 R a
4 26.47  0.32 0.01 R a
4 26.47  0.31 0.01 G a
4 27.39  0.34 0.02 R a
4 27.39  0.34 0.02 G a
4 27.62  0.41 0.04 R a
4 27.68  0.44 0.02 R a
4 27.68  0.37 0.02 G a
4 27.70  0.40 0.01 G a
4 27.72  0.39 0.03 R a
4 13.30 -0.46 0.01 V a
4  5.40 -0.45 0.01 V a
4  7.50 -0.58 0.03 V a
```

```
4   8.20 -0.66 0.02 V a
4   8.20 -0.67 0.01 R a
4   8.10 -0.66 0.02 V a
4   8.10 -0.67 0.01 R a
4   9.60 -0.58 0.01 V a
4   9.60 -0.63 0.01 R a
4 10.30 -0.61 0.02 V a
4 10.30 -0.67 0.02 R a
4 11.20 -0.55 0.01 V a
4 11.20 -0.58 0.01 R a
4 12.30 -0.48 0.02 V a
4 13.90 -0.49 0.02 V a
4 14.60 -0.48 0.02 V a
4 24.40  0.29 0.03 V a
4 24.40  0.26 0.04 R a
4   7.40 -0.74 0.03 V a
4   7.40 -0.76 0.04 R a
4 26.39  0.89 0.29 V a
4 26.39  0.70 0.29 R a
4 27.64  0.42 0.25 V a
4 27.64  0.56 0.16 R a
4 22.74  0.02 0.04 V b
4 22.74  0.08 0.02 R b
4 22.32  0.02 0.03 V b
4 22.32  0.00 0.04 R b
```

Polarization Curve Parameters:

The polarimetric parameters were obtained fitting the observations to a polarization curve using the function:

$$P_r(\alpha) = Coe_1 \times \left[\exp\left(-\frac{\alpha}{Coe_2}\right) - 1 \right] + Coe_3 \times \alpha,$$

where α is the phase angle in degrees. The minimum of the polarization curve is identified by Pmin, Phmin is the phase angle where Pmin is reached, Ph0 is the inversion angle, and k is the slope of the polarization curve at Ph0.

```
#
#      Coe1      eCoe1      Coe2      eCoe2      Coe3      eCoe3
#    1.4505    0.0219    4.6353    0.1366    0.0660    0.0008
#
#    Phmin    err    Pmin      err  Ph0      err    k        err
#     7.21   0.12 -0.668    0.023 21.76   0.63 0.0632 0.0009
```