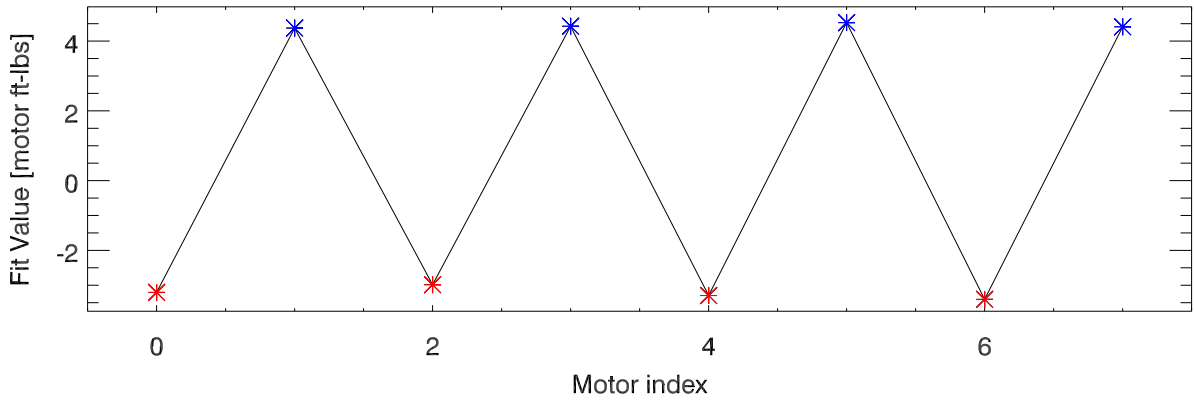
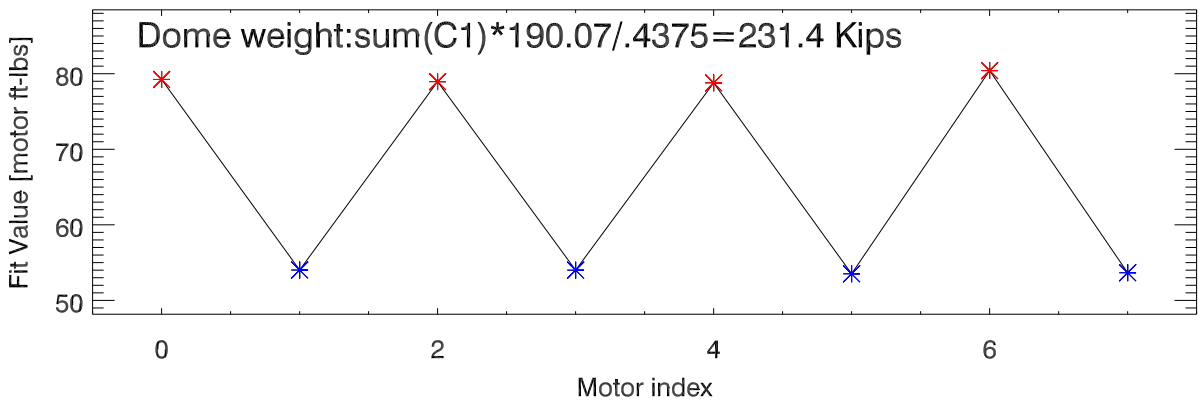


x0:m11  
 x1:m12  
 x2:m21  
 x3:m22  
 x4:m31  
 x5:m32  
 x6:m41  
 x7:m42

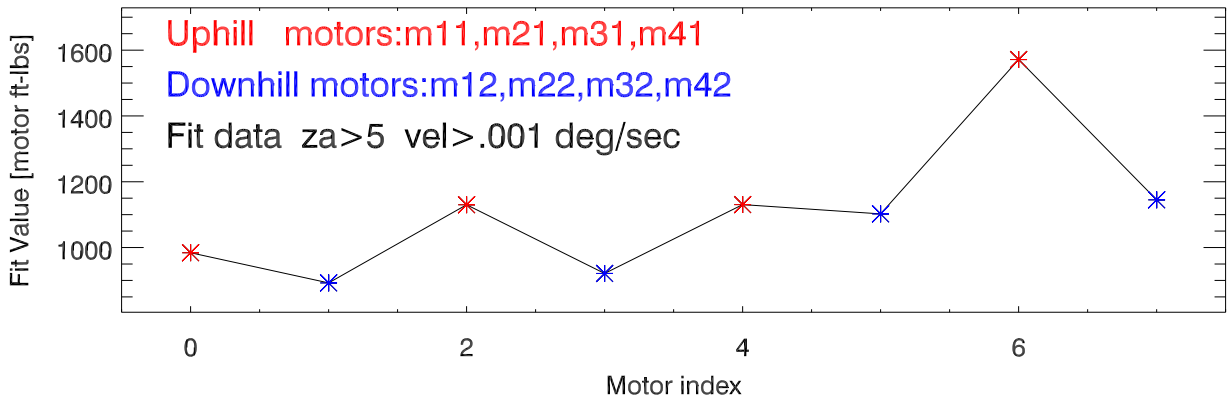
apr12:GrTorques. Fit:C0 + C1\*sinza + C2\*vel \* C3\*accel. (c0:Constant)



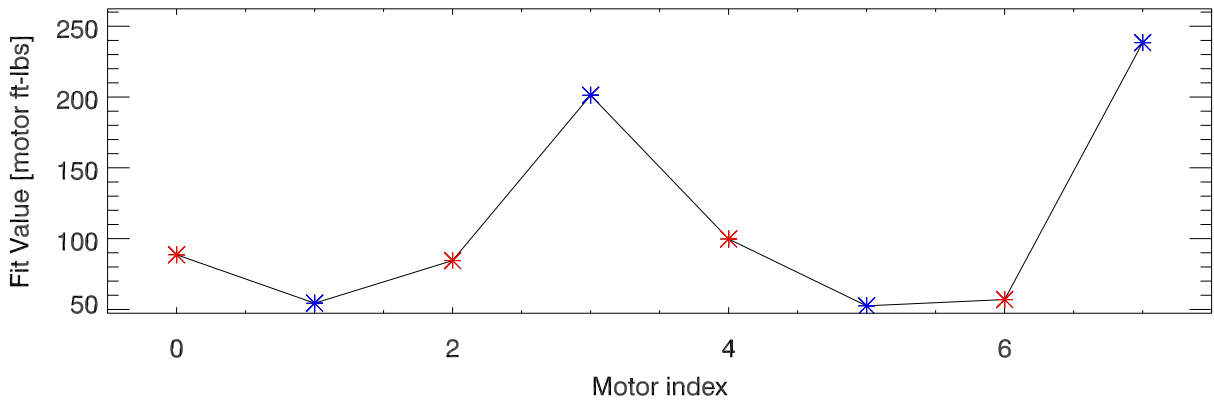
(c1\*sinza:Gravity)

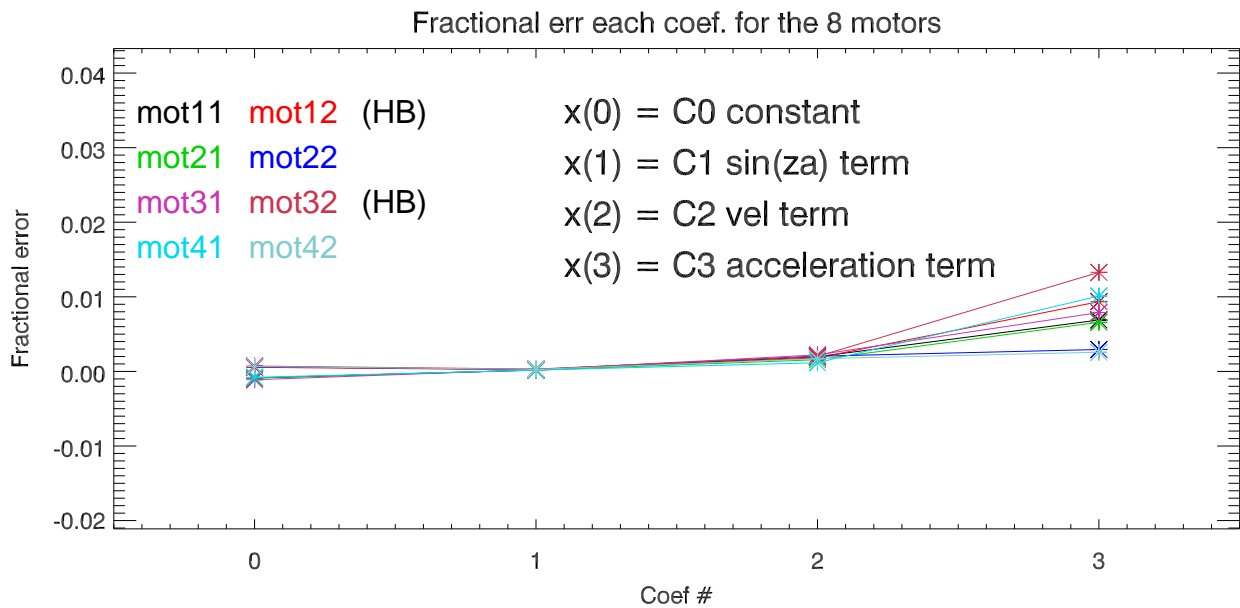
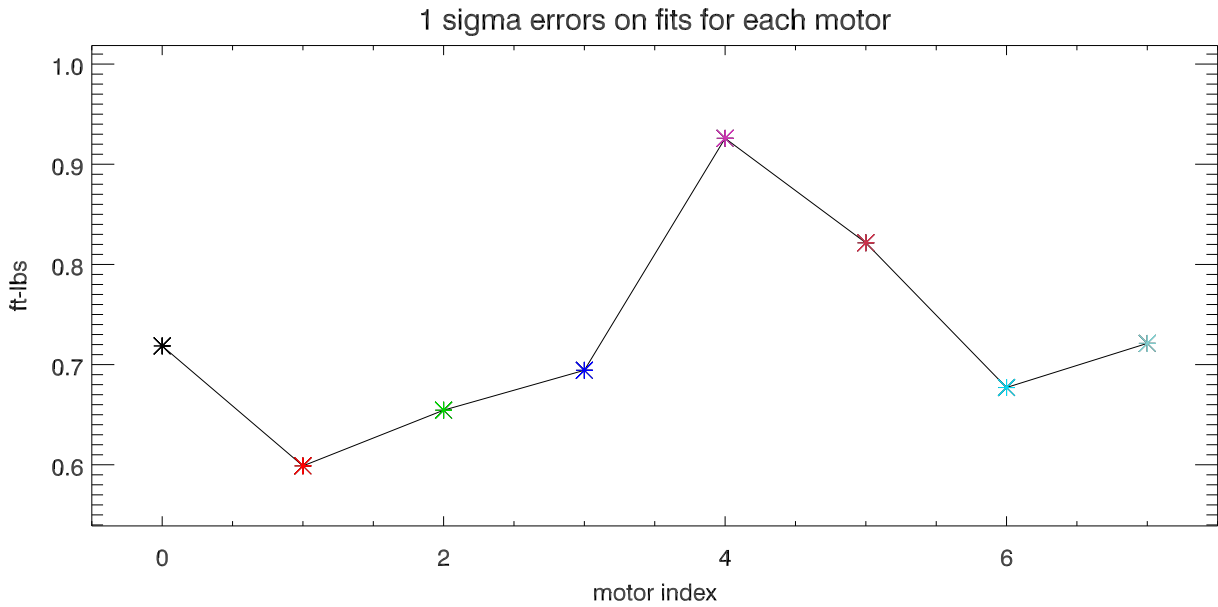


(c2\*vel (deg/sec):Friction)



(c3\*accel(deg/sec ^ 2):Acceleration)





Fit =  $C0 + C1 \cdot \sin(za) + C2 \cdot \text{vel}(\text{deg}/\text{sec}) + C3 \cdot \text{accel}(\text{deg}/\text{sec}^2)$   
 MaxVel = (.0147 deg/sec)    maxAccel = (.025 deg/sec<sup>2</sup>)

Fit values (ft-lbs) for each motor

| motor | C0    | C1    | C2      | C3     |
|-------|-------|-------|---------|--------|
| m11   | -3.21 | 79.24 | 984.09  | 88.65  |
| m12   | 4.37  | 54.02 | 892.56  | 54.43  |
| m21   | -2.99 | 78.95 | 1130.01 | 84.51  |
| m22   | 4.43  | 54.00 | 921.13  | 201.25 |
| m31   | -3.29 | 78.80 | 1130.45 | 99.76  |
| m32   | 4.53  | 53.52 | 1102.21 | 52.57  |
| m41   | -3.41 | 80.41 | 1571.37 | 56.99  |
| m42   | 4.41  | 53.66 | 1145.00 | 238.43 |