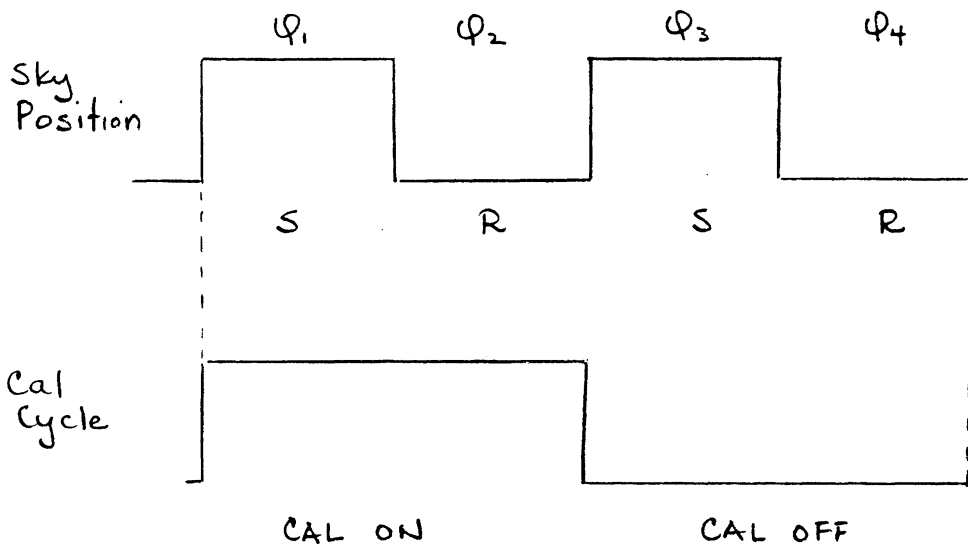# CALIBRATION SCHEME FOR THE NEW DIGITAL BACKEND

1 sample consists of 4 phases, $\varphi_1, \ldots \varphi_4$

⇒ (sky position,
  S = SOURCE
  R = REFERENCE)

CAL FIRES AT HALF
THE RATE OF THE
SUBREFLECTOR

PHASE φ_1 = S + CAL

PHASE φ_2 = R + CAL

PHASE φ_3 = S

PHASE φ_4 = R

SWITCHED POWER $SP = [\varphi_1 - \varphi_2] + [\varphi_3 - \varphi_4] = 2[S - R]$

TOTAL POWER $TP = \varphi_1 + \varphi_2 + \varphi_3 + \varphi_4 = 2(S + R) + 2 \times CAL$

CAL VALUE $CAL = \varphi_1 + \varphi_2 - \varphi_3 - \varphi_4 = 2 \times CAL$

ZERO LEVEL $Z = [\varphi_1 - \varphi_2] + [\varphi_4 - \varphi_3] = DC\ LEVEL$

$$S+C - R+C \quad R-S$$

(Zero level can be used to provide an RMS value independent