```
1
2    do
3
4      gosub Read_Light:
5
6      gosub Read_Temperature:
7
8    loop
9
10   ;SUB's ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
11
12   Read_Light:
13    'Read the light level using an LED as a mini solar PV cell
14    readadc10 1,w1
15    'Read 10 bit resolution voltage on pin 1 into word w1
16    w5 = w1
17    'Transfer and scale if needed to w5 Cicadacom data word
18    b9 = 1
19    'Set Channel: ID
20    gosub Tx_Pi_Data
21    'Transmit data to the Pi
22   return
23
24   Read_Temperature:
25   'Read DS18B20 on pin 2
26    pokesfr %10001100, %00000100
27    'Apply WPU Power to pin to power DS18B20
28    readtemp12 2,w2
29    'Read HIGH resolution 12 bit DS18B20 temperature
30    pokesfr %10001100, %00000000
31    'WPU Power OFF
32    w5 = w2 * 10 / 16
33    'Scale to Decimal TENTHS of a degree C
34    b9 = 2
35    'Set Channel: ID
36    gosub Tx_Pi_Data
37    'Transmit data to the Pi
38   return
39
40   Tx_Pi_Data:
41    b8  = 1
42    'Set Node ID as in :01
43    b13 = b8 + b9 + w5 // 256
44    'Numeric Check Sum byte b13 hash byte total of Node + Channel + Data
45    serout 0,N2400,(13,10,"Tx Data to Pi = ",":0",#b8,44,#b9,44,#w5,44,#b13)
46    'Echo Local Data to Programming Lead in # decimal ASCII LFCR
47   "Node,Channel,Data,Checksum"
47    serout 4,T2400,(":0",44,#b8,44,#b9,44,#w5,44,#b13,13,10)
48    'Tx Data packet to Pi in # decimal ASCII "Node,Channel,Data,Checksum CR/LF"
49    'gosub Rx_Pi_Data
50    'Future Feature to Rx data FROM Cayenne: Listen if any message from the Pi
51    nap 7
52    'Pace Cayenne upload rate
53    return
54
55
```