

SOLSTICIO = "S"

12/6 : PUESTA SOL +

29/6 : SALIDA + TARDE

$$TSL = H + \omega$$

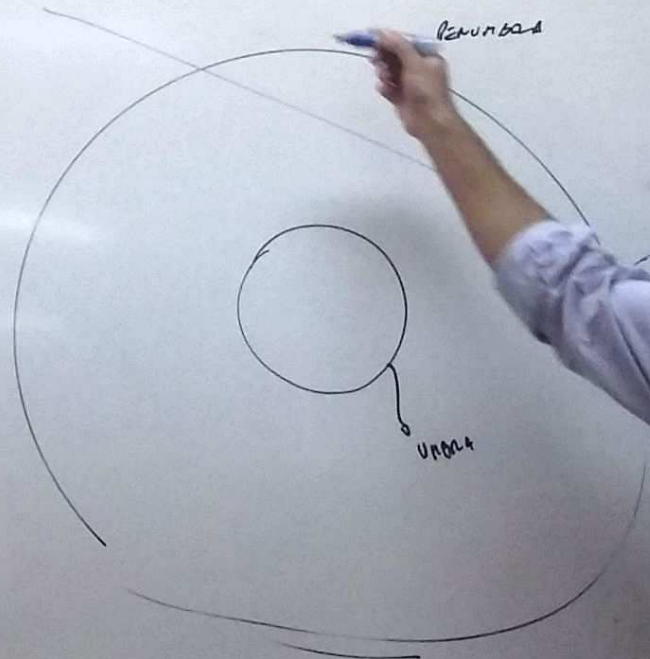
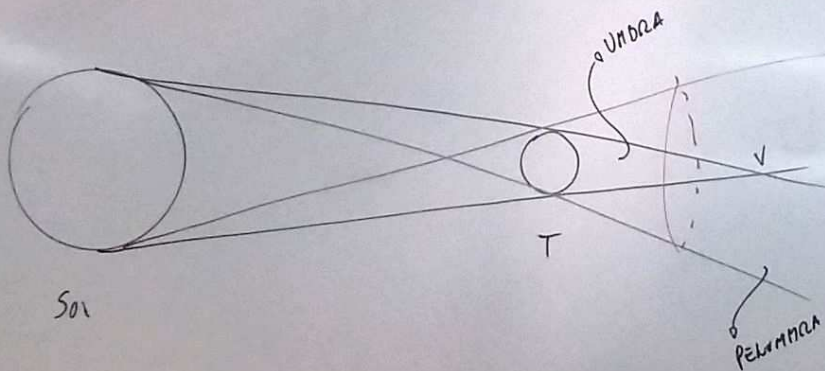
↑



25/6 PARCIAL

ECLIPSES

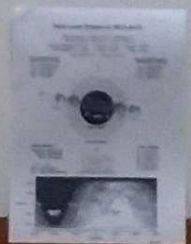
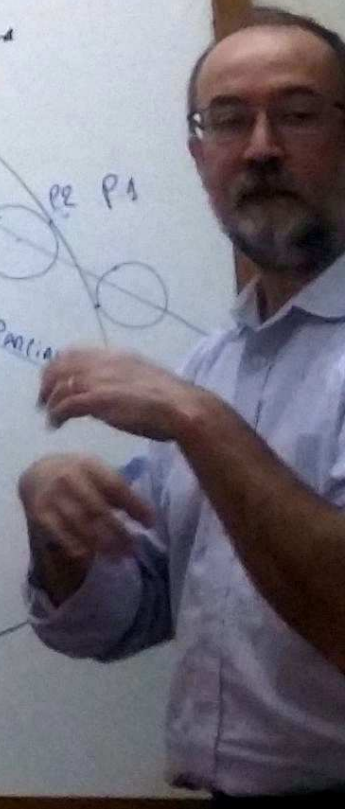
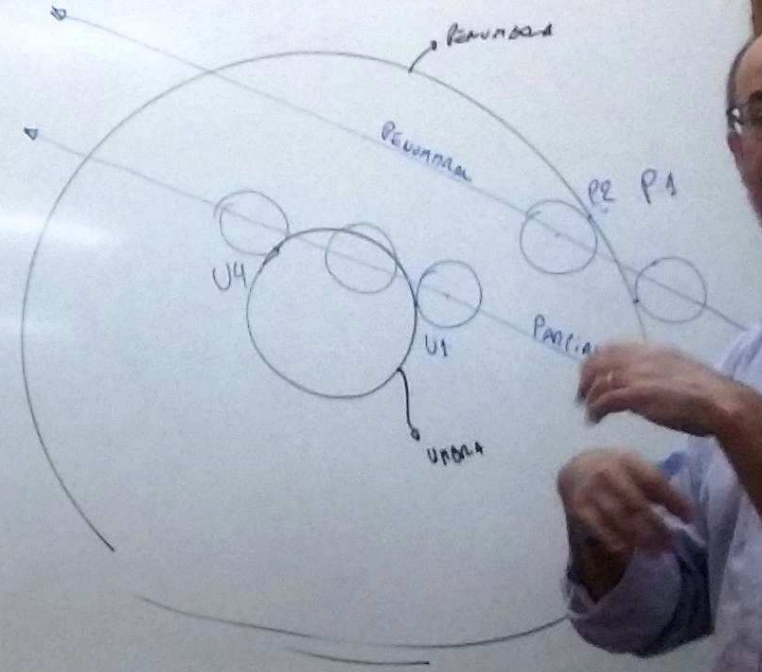
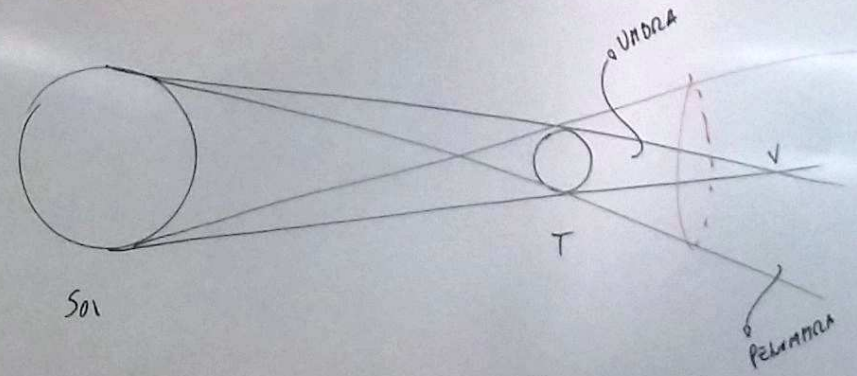
NOTA FINAL:  $\frac{(\text{PUNTAJE} - 150)}{150} \times 5 + 3$



25/6 PARCIAL

# ECLIPSES

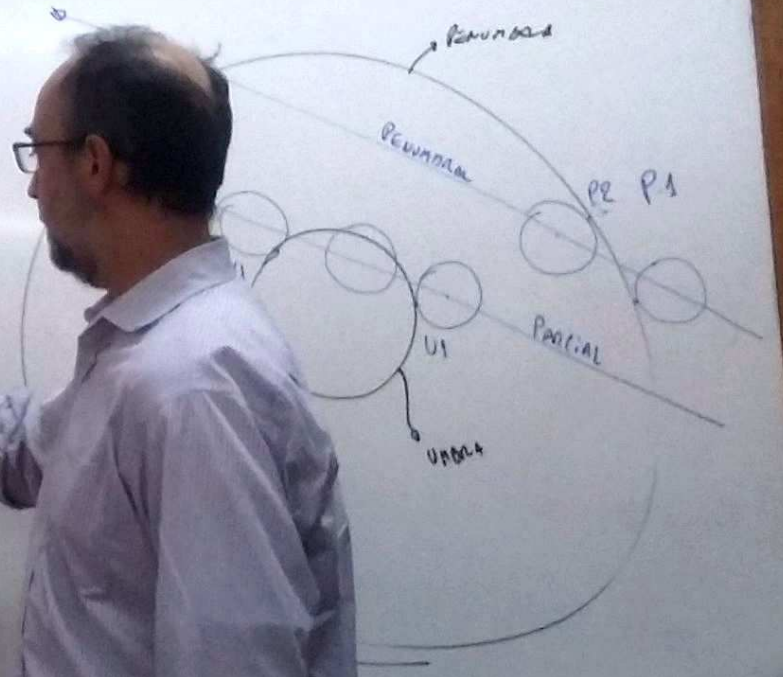
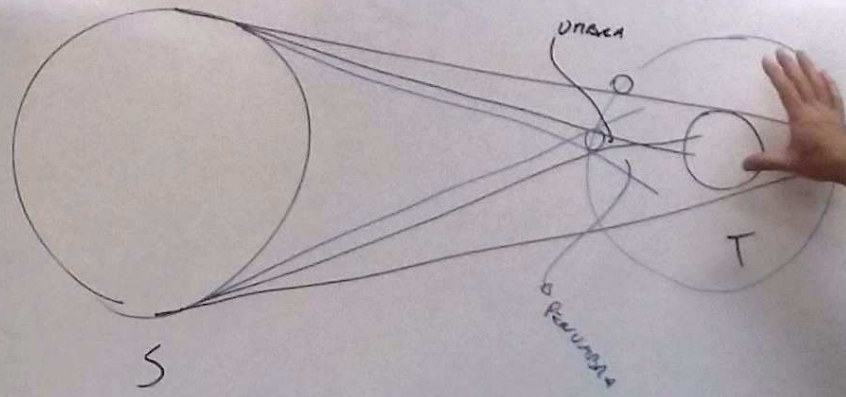
NOTA FINAL:  $\frac{(\text{PUNTAJE} - 150)}{150} \times 5 + 3$



25/6 PARCIAL

ECLIPSES → LUNA

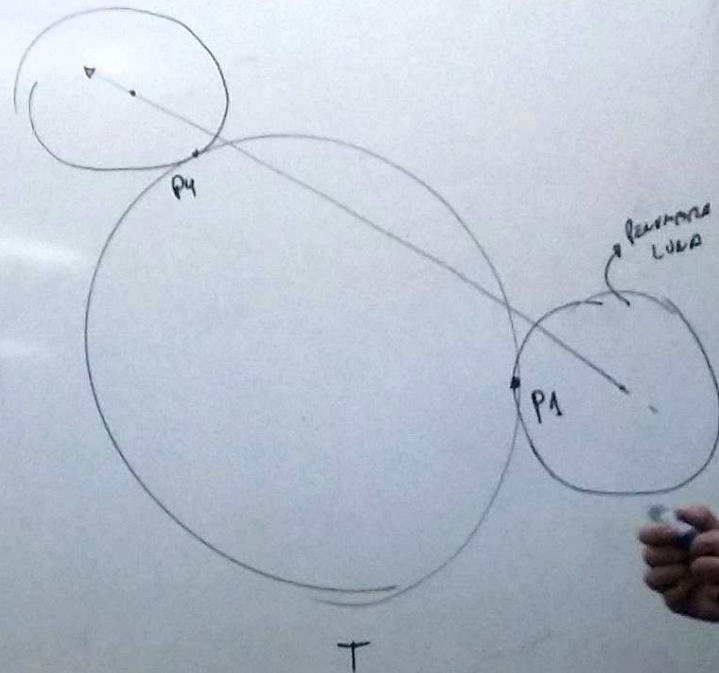
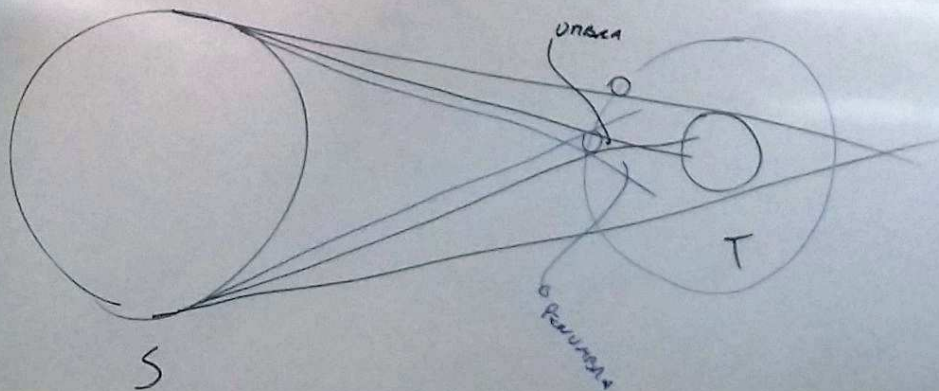
NOTA FINAL:  $\frac{(\text{PUNTAJE} - 150)}{150} \times 5 + 3$



25/6 PARCIAL

NOTA FINAL:  $\frac{(\text{PUNTAJE} - 150)}{150} \times 5 + 3$

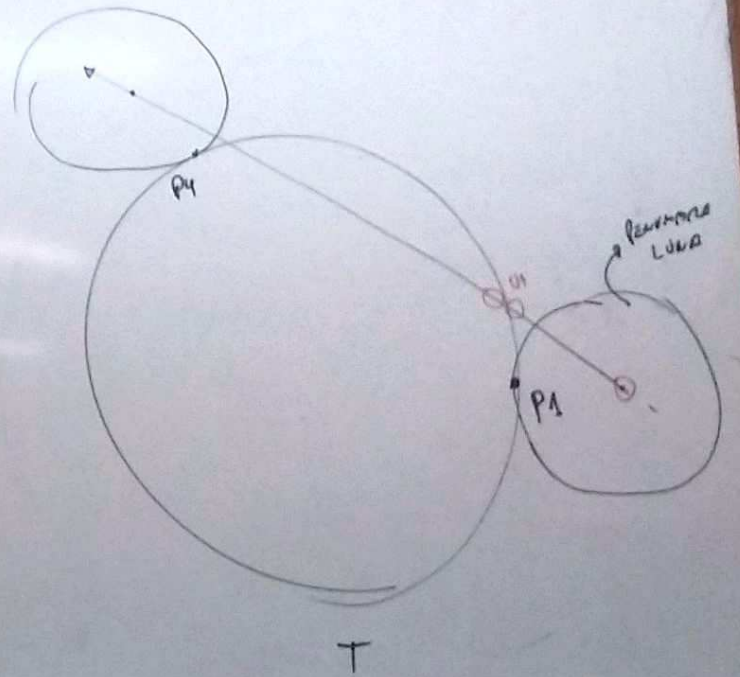
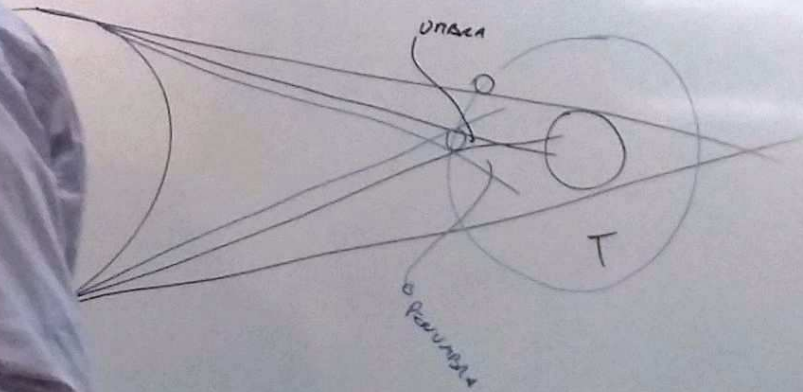
ECLIPSES → LUNA



20/6 PARCIAL

$$\text{FINAL: } \frac{(\text{PUNTAJE} - 150)}{150} \times 3 + 3$$

ECLIPSES → LUNA



PENUMBRA LUNA

PA

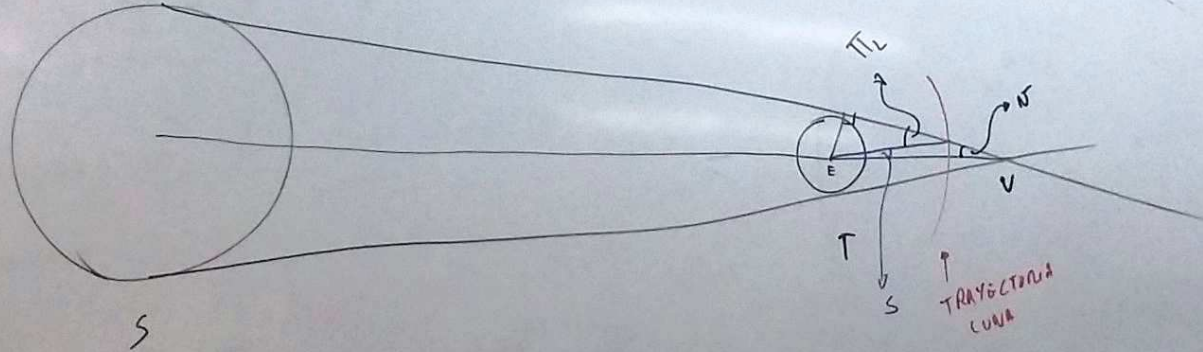
T

25/6 PARCIAL

NOTA FINAL:  $\frac{(\text{PUNTAJE} - 150)}{150} \times 5 + 3$

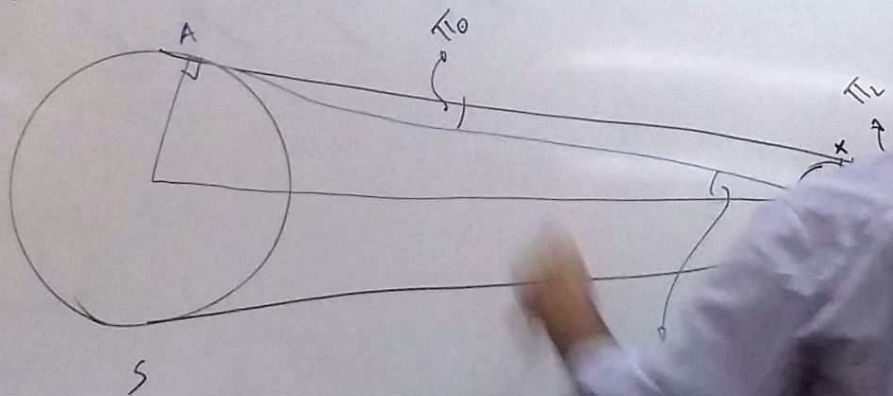
S: SEMIDIÁMETRO CONO SOMBRA  
TIERRA A LA ALTURA DE LA  
LUNA

$\pi_L = S + N$



25/6 PARCIAL

NOTA FINAL:  $\frac{(\text{PUNTAJE} - 150)}{150} \times 5 + 3$



$\Delta EXV:$   
 $S + N$

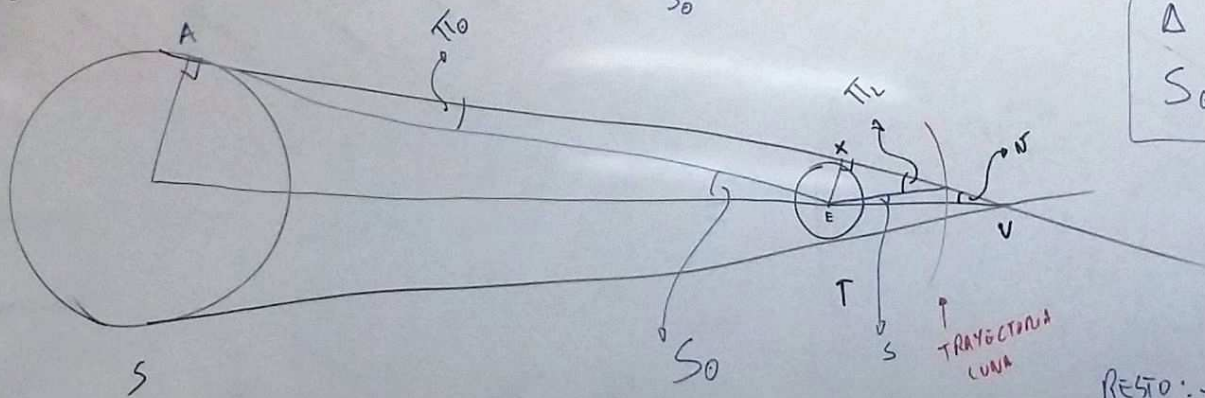
S: SEMIDIÁMETRO CONO SOMBRAS TIERRA A LA ALTURA DE LA LUNA

$\Delta AEV:$   
 $S_0 = \Pi_0 + N$



25/6 PARCIAL

NOTA FINAL:  $\frac{(\text{PUNTAJE} - 150)}{150} \times 5 + 3$



$\Delta EXV:$   
 $\pi_L = s + N$

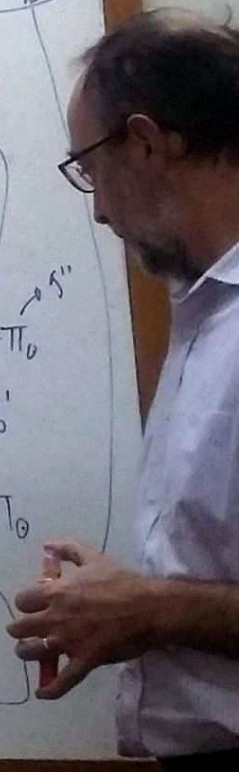
S: SEMIDIÁMETRO COMO SOMBRA TIERRA A LA ALTURA DE LA LUNA

$\Delta AEV:$   
 $S_0 = \pi_0 + N$

$N = S_0 - \pi_0$   
 → 5"  
 ↳ 16'

RESTO:  $\pi_L - S_0 = s - \pi_0$

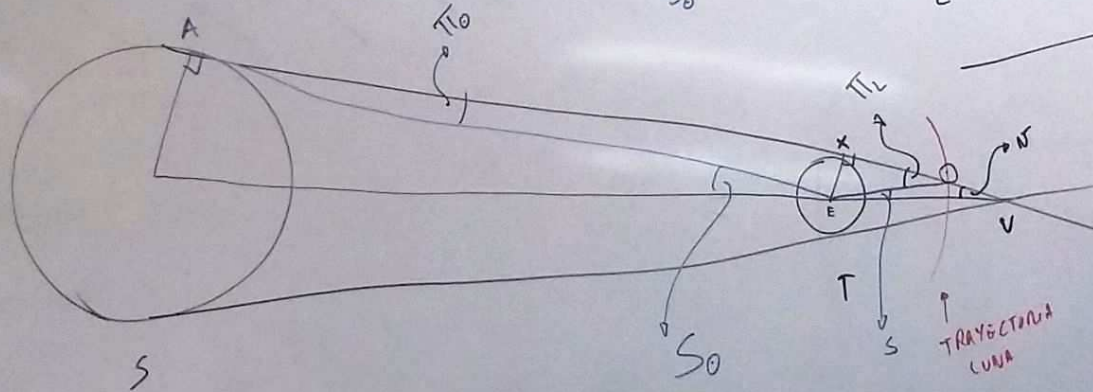
$\Rightarrow s = \pi_L + \pi_0 - S_0$



$\eta = \text{Dist LUNA - ANTI SOL}$

si  $\eta \leq s + S_L \rightarrow$  PAACIAL

si  $\eta \leq s - S_L \rightarrow$



RESTO:  $\pi_L - s_0 =$

$\Rightarrow s = \pi_L +$



CONDICIONES

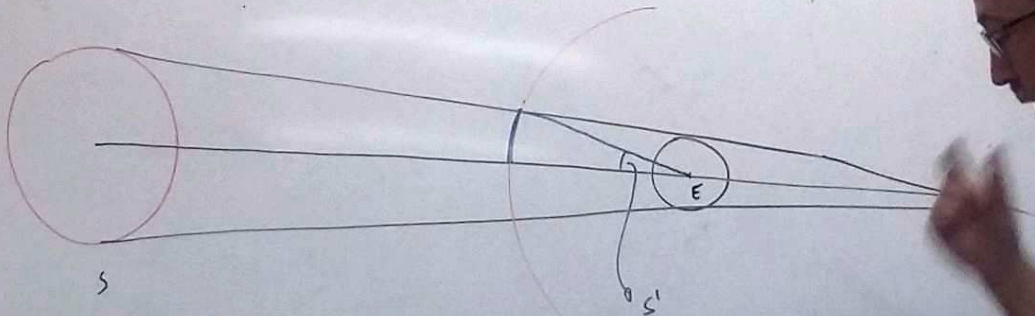
EC. LUNA

$$\eta = \text{DIST LUNA} - \text{ANTI SOL}$$

$$\text{si } \eta \leq S_1,02 + S_L \rightarrow \text{PARCIAL}$$

$$\text{si } \eta \leq S_1,02 - S_L \rightarrow \text{TOTAL}$$

↑  
ATMÓSFERA



CONDICIONES

EC. LUNA

$$\eta = \text{DIST LUNA} - \text{ANTI SOL}$$

$$\text{si } \eta \leq S_1,02 + S_L \rightarrow \text{PARCIAL}$$

$$\text{si } \eta \leq S_1,02 - S_L \rightarrow \text{TOTAL}$$

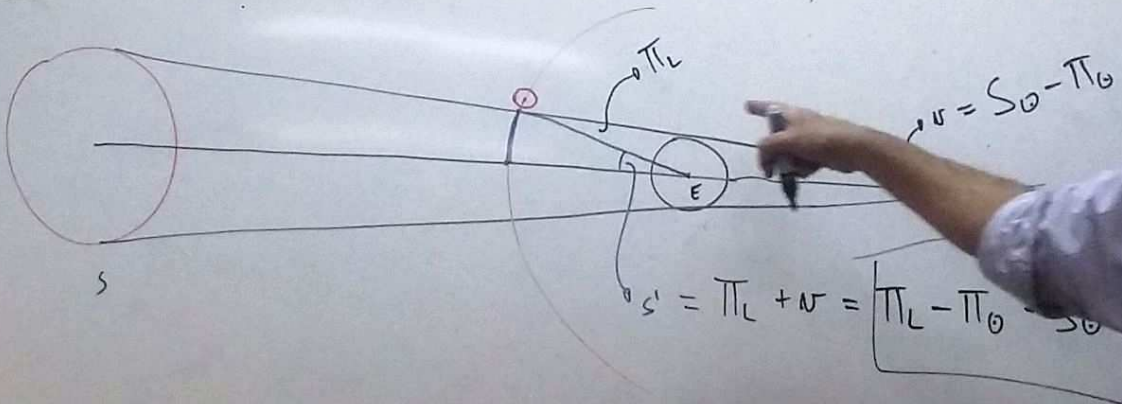
↑  
ATMÓSFERA

CONDICIÓN EC. SOL:

$$\eta = \text{DIST ANUNIM SOL} - \text{LUNA}$$

$$\eta \leq S' + S_L \rightarrow \text{PARCIAL}$$

$$\eta \leq S' - S_L \rightarrow \text{TOTAL}$$



$$s' = \pi_L + u = \pi_L - \pi_0 - S_0$$

CONDICIONES

EC. LUNA

$$\eta = \text{DIST LUNA} - \text{ANTI SOL}$$

$$\text{si } \eta \leq S_{1,02} + S_L \rightarrow \text{PARCIAL}$$

$$\text{si } \eta \leq S_{1,02} - S_L \rightarrow \text{TOTAL}$$

↑  
ATMÓSFERA

CONDICIÓN EC. SOL:

$$\eta = \text{DIST ANILUM SOL} - \text{LUNA}$$

$$\eta \leq s' + S_L \rightarrow \text{PARCIAL}$$

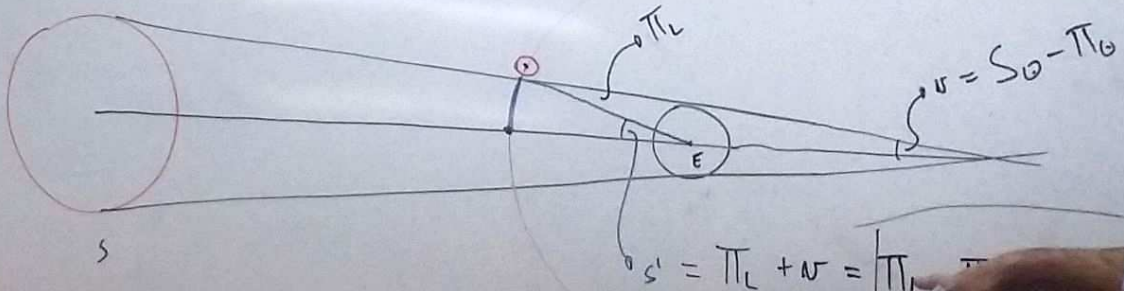
$$\eta \leq s' - S_L \rightarrow \text{TOTAL}$$

$$S_L \sim 15',5$$

$$S_0 \sim 16'$$

$$\pi_0 \sim 9'$$

$$\pi_L \sim 57'$$



$$s' = \pi_L + u = \pi_L + S_0 - \pi_0$$

CONDICIONES

EC. LUNA

$$\eta = \text{Dist LUNA} - \text{AUTISOL}$$

$$\text{si } \eta \leq S_1 + S_L \rightarrow \text{PARCIAL}$$

$$\text{si } \eta \leq S_1 - S_L \rightarrow \text{TOTAL}$$

ATMÓSFERA

$$s = \pi_L + \pi_0 - S_0 = 41'$$

$$54 \quad - 16'$$

$$\eta \sim 57'$$

CONDICIÓN EC. SOL:

$$\eta = \text{DIST ANUAL SOL} - \text{LUNA}$$

$$\eta \leq s' + S_L \rightarrow \text{PARCIAL}$$

$$\eta \leq s' - S_L \rightarrow \text{TOTAL}$$

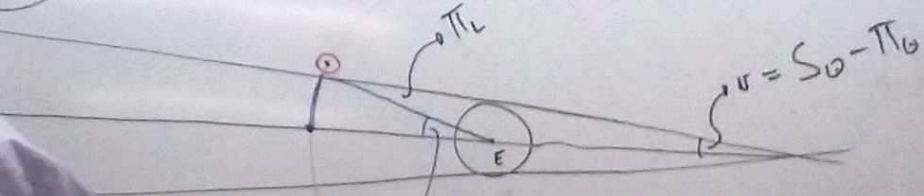
$$S_L \sim 15',5$$

$$S_0 \sim 16'$$

$$\pi_0 \sim 9''$$

$$\pi_L \sim 54'$$

$$\sim 89'$$



$$s' = \pi_L + w = \pi_L - \pi_0 + S_0 = s'$$

52

CONDICIONES

EC. LUNA

$\eta = \text{Dist LUNA} - \text{ANTI SOL}$

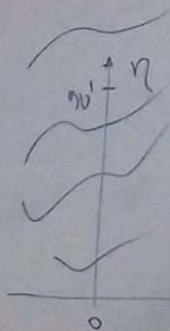
si  $\eta \leq S_1,02 + S_L \rightarrow \text{PARCIAL}$

si  $\eta \leq S_1,02 - S_L \rightarrow \text{TOTAL}$

↑  
ATMÓSFERA

$s = \pi_L + \pi_0 - S_0 = 41'$   
 $57 \quad - 16'$

$\eta \sim 57'$



CONDICIÓN EC. SOL:

$\eta = \text{DIST ANULUM SOL} - \text{LUNA}$

$\eta \leq s' + S_L \rightarrow \text{PARCIAL}$

$\eta \leq s' - S_L \rightarrow \text{TOTAL}$

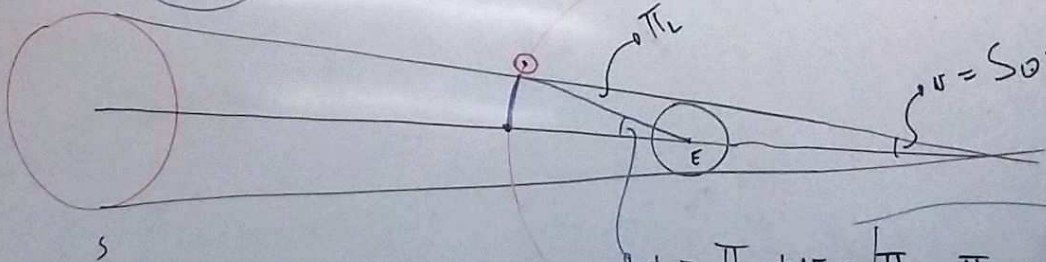
$\sim 89'$

$S_L \sim 15',5$

$S_0 \sim 16'$

$\pi_0 \sim 9'$

$\pi_L \sim 57'$



$u = S_0 - \pi_0$

$s' = \pi_L + u = \pi_L - \pi_0 + S_0 = s'$

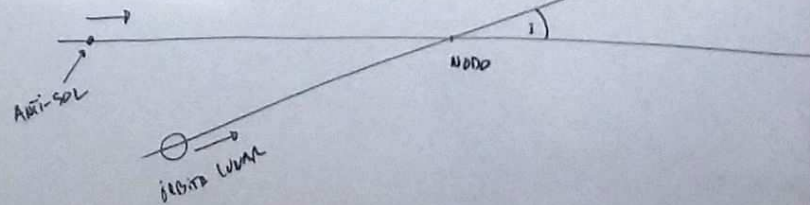
57'

$\frac{P(\text{LUNA})}{P(\text{SOL})} \sim \frac{57}{89} \sim \frac{2}{3}$

FRECUENCIA ECLIPSES

$$N = \frac{(P_{\text{Lunas}} - 150)}{150} \times 9 + 3$$

$N \geq 3 \rightarrow \text{AL TERCIO}$   
 $N < 3 \rightarrow \text{P y T}$

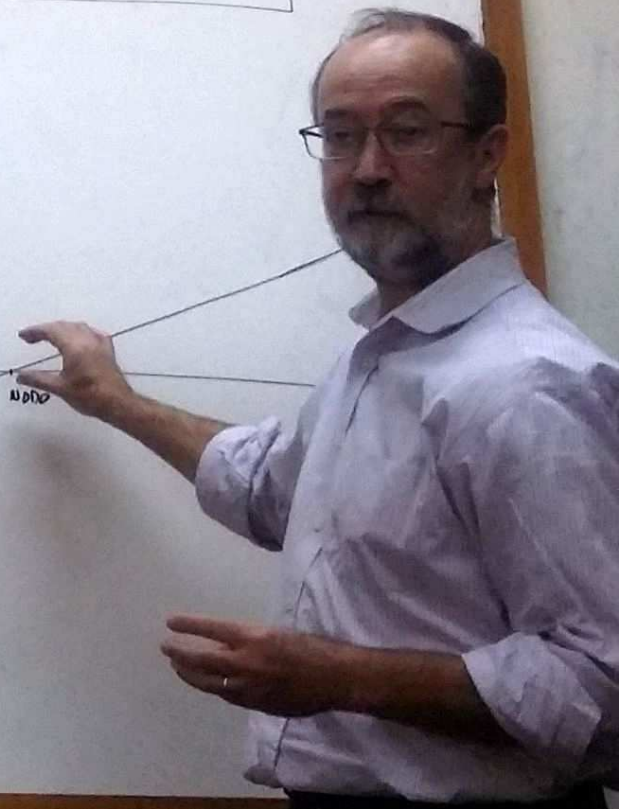
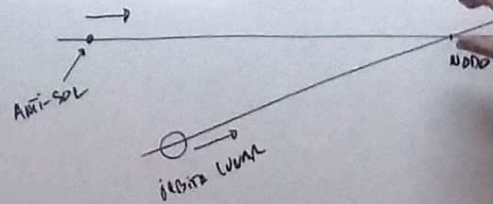




FRECUENCIA ECLIPSES

$$N = \frac{(P_{\text{Lunas}} - 150)}{150} \times 9 + 3$$

$N \geq 3 \rightarrow \text{AL TERCERO}$   
 $N < 3 \rightarrow \text{P y T}$

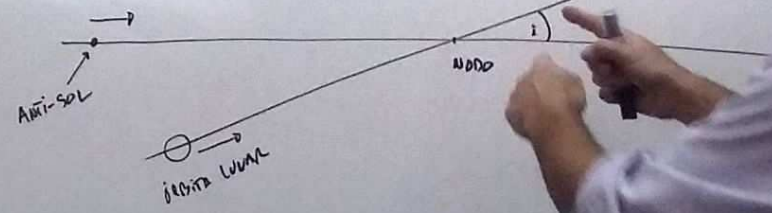


FRECUENCIA ECLIPSES

$$N = \frac{(Puntos - 150)}{150} \times 9 + 3$$

$N \geq 3 \rightarrow$  AL TERCERO  
 $N < 3 \rightarrow$  P y T

$$\omega_{Sol-Luna} \approx \frac{360^\circ}{346 \text{ dias}}$$



FRECUENCIA ECLIPSES

$$N = \frac{(Puntos - 150)}{150} \times 9 + 3$$

$N \geq 3 \rightarrow$  AL TERCERO  
 $N < 3 \rightarrow$  P y T

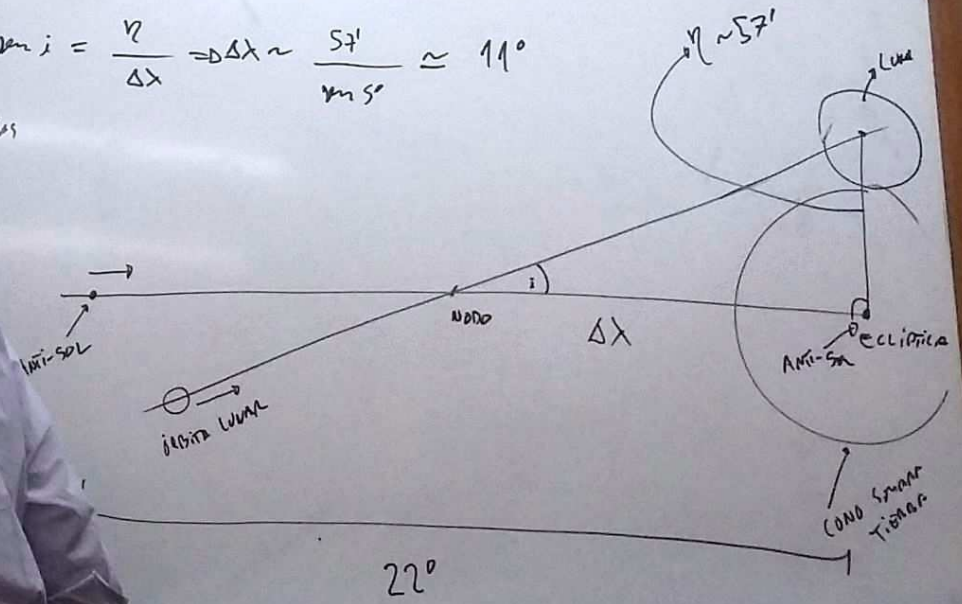
$$\tan i = \frac{r}{\Delta x} \Rightarrow \Delta x \approx \frac{57'}{\tan 5^\circ} \approx 11^\circ$$

A CADA 29 DIAS

$$\omega_{Sol-Luna} \approx \frac{360^\circ}{346 \text{ DIAS}}$$

$$360^\circ \rightarrow 346 \text{ dias}$$

$$27^\circ \rightarrow 21 \text{ dias}$$



FRECUENCIA ECLIPSES

$$N = \frac{(Puntos - 150)}{150} \times 5 + 3$$

$N \geq 3 \rightarrow$  AL TERCERO  
 $N < 3 \rightarrow$  P y T

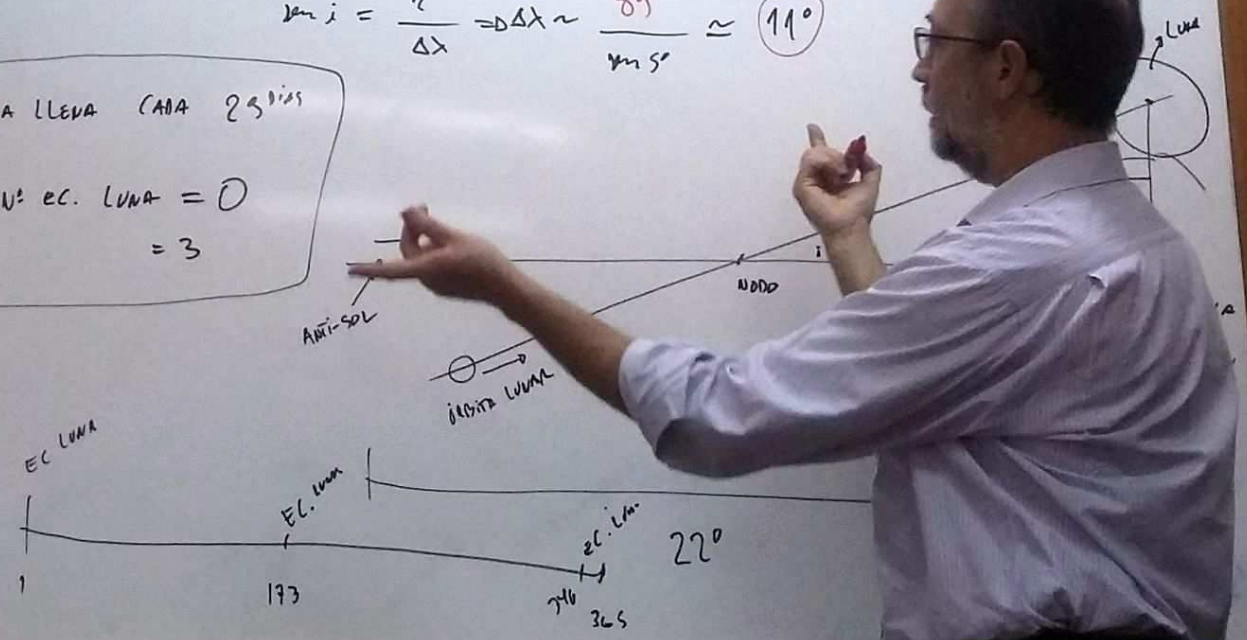
$$\text{sen } i = \frac{r}{\Delta x} \Rightarrow \Delta x \approx \frac{80'}{\text{sen } 5'} \approx 11^\circ$$

17°

LUNA LLENA CADA 29 DIAS  
 MÍN. N° EC. LUNA = 0  
 MAX. = 3

$$\omega_{Sol-Luna} \approx \frac{360^\circ}{346 \text{ DÍAS}}$$

$360^\circ \rightarrow 346 \text{ días}$   
 $29^\circ \rightarrow 29 \text{ días}$



FRECUENCIA ECLIPSES

$$N = \frac{(Puntos - 150)}{150} \times 5 + 3$$

$N \geq 3 \rightarrow$  AL TELÉFONO  
 $N < 3 \rightarrow$  P y T

LUNA LLENA CADA 29 días

MÍN. N° EC. LUNA = 0

MAX. = 3

EC. SOL

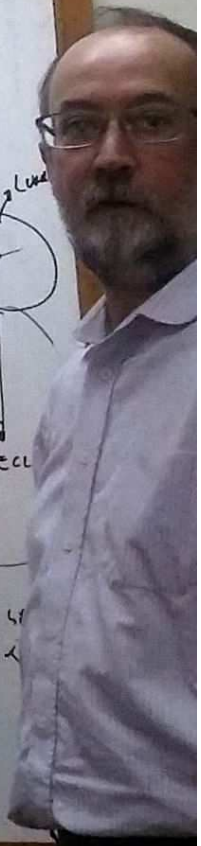
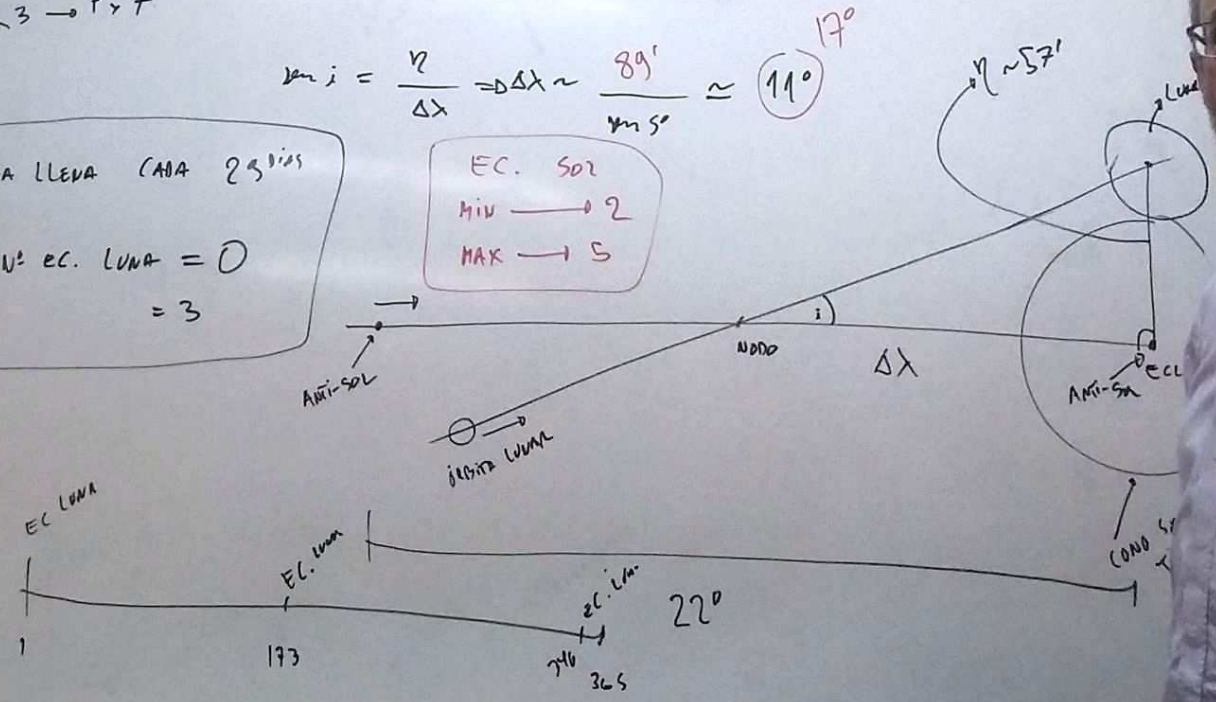
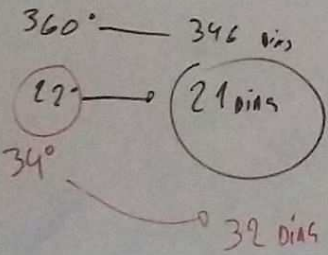
MÍN  $\rightarrow$  2

MAX  $\rightarrow$  5

$$\tan i = \frac{r}{\Delta x} \Rightarrow \Delta x \approx \frac{89'}{\tan 5^\circ} \approx 1017'$$

$17^\circ$

$$\omega_{Sol-Luna} \approx \frac{360^\circ}{346 \text{ días}}$$



$$N = \frac{(P_{\text{LUNA}} - 150)}{150} \times 5 + 3$$

$N \geq 3 \rightarrow$  AL TELÉSCOPO  
 $N < 3 \rightarrow$  P + T

$$|\beta_*| \leq 6^{\circ} 16'$$

FRECUENCIA DE ECLIPSES

$$v_{\text{LUNA}} = \frac{v}{\Delta x} \Rightarrow \Delta x \sim \frac{8}{v_{\text{LUNA}}} \sim 57'$$

LUNA

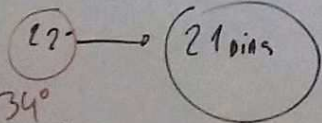
LUNA LLENA CADA 29 DIAS

MÍN. N° EC. LUNA = 0  
MAX. = 3

EC. SOL  
MÍN  $\rightarrow$  2  
MAX  $\rightarrow$  5

$$W_{\text{SOL-LUNA}} \approx \frac{360^{\circ}}{346 \text{ DIAS}}$$

360° — 346 días



34° — 32 días

