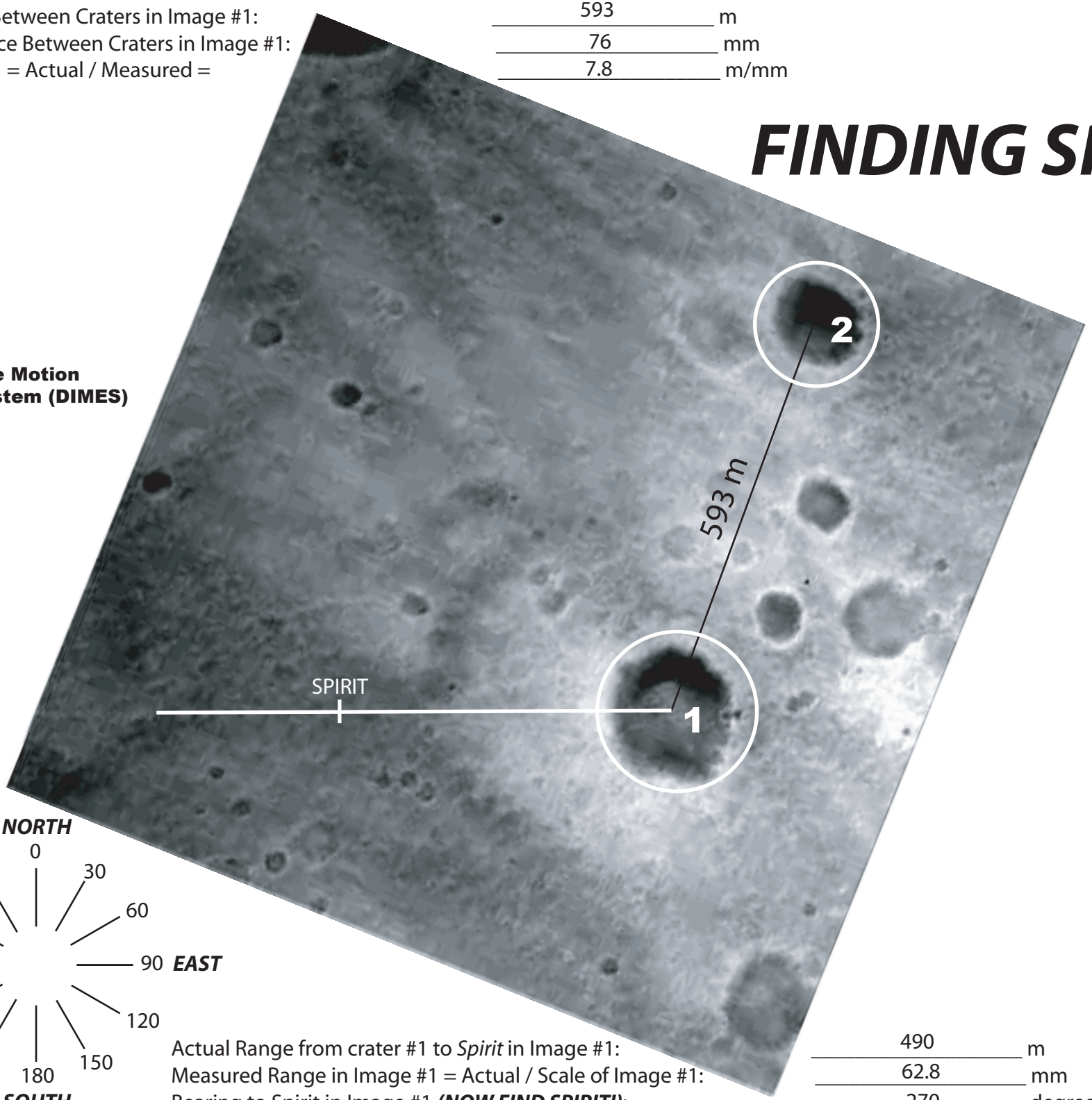
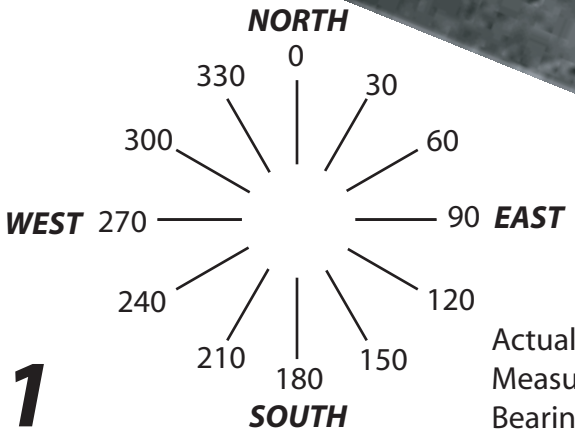
Actual Distance Between Craters in Image #1: 593 m
Measured Distance Between Craters in Image #1: 76 mm
Scale of Image #1 = Actual / Measured = 7.8 m/mm

FINDING SPIRIT

Descent Image Motion Estimation System (DIMES)

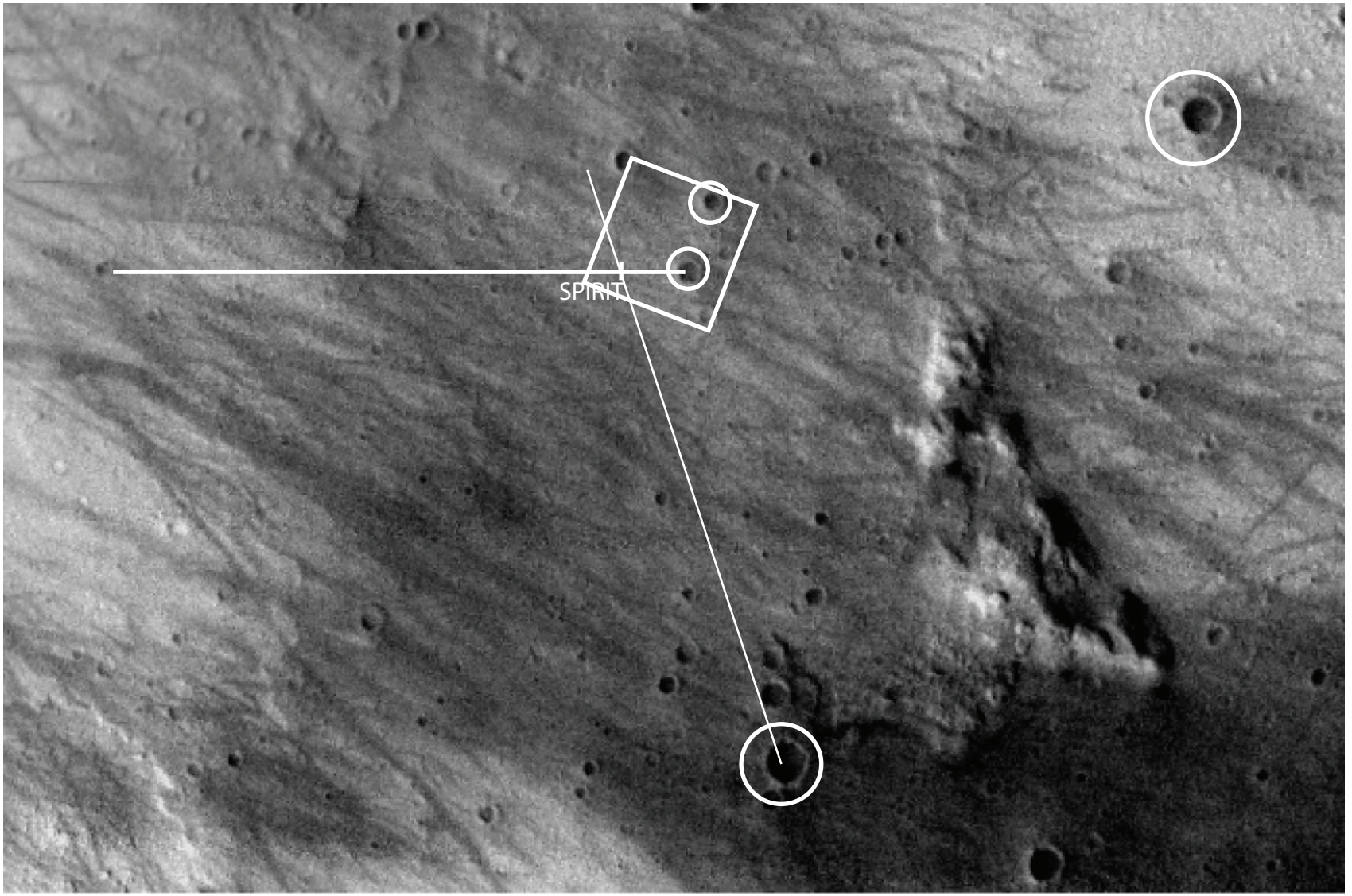


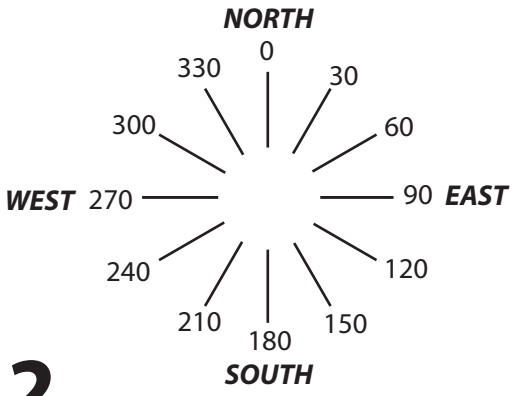


Actual Range from crater #1 to *Spirit* in Image #1: 490 m
Measured Range in Image #1 = Actual / Scale of Image #1: 62.8 mm
Bearing to Spirit in Image #1 ***(NOW FIND SPIRIT!)***: 270 degrees

Thermal Emission Imaging System (THEMIS)

Visible Camera





Actual Distance Between Two Largest Craters in Image #1:	593	m
Measured Distance Between Craters in Image #2 **(Circle them and measure!)**:	12	mm
Scale of Image #2 **(Actual Distance / Measured Distance)**:	49.4	m/mm

Step 1: *Find the Scale of the Current Image*

Actual Range from Largest Crater in Image #1 to *Spirit*:	490	m
Measured Range in Image #2 **(Actual Range / Scale of Image #2)**:	9.9	mm
Bearing from Crater in Image #1 to *Spirit* ***(NOW FIND SPIRIT!)***:	270	degrees

Step 2: *Find Spirit In the Current Image*

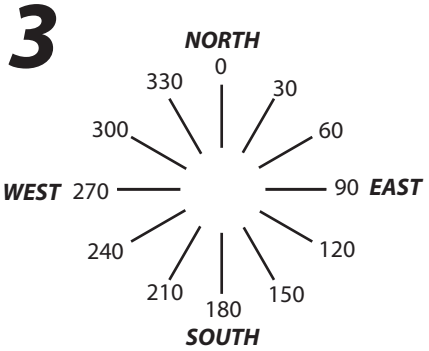
Measured Distance Between Two Largest Craters in Image #2 **(Circle and measure!):**	123	mm
Actual Distance **(Measured Distance x Scale of Image #2)**:	6076	m

Step 3: *Find Actual Dist. Between Two Largest Craters*

Measured Range to *Spirit* from Largest Crater in Image #2 **(Measure it!)**:	83	mm
Actual Range **(Measured Range x Scale of Image #2)** to *Spirit*:	4100	m
Bearing to *Spirit* from Largest Crater in Image #2 **(Measure it!)**:	343	degrees

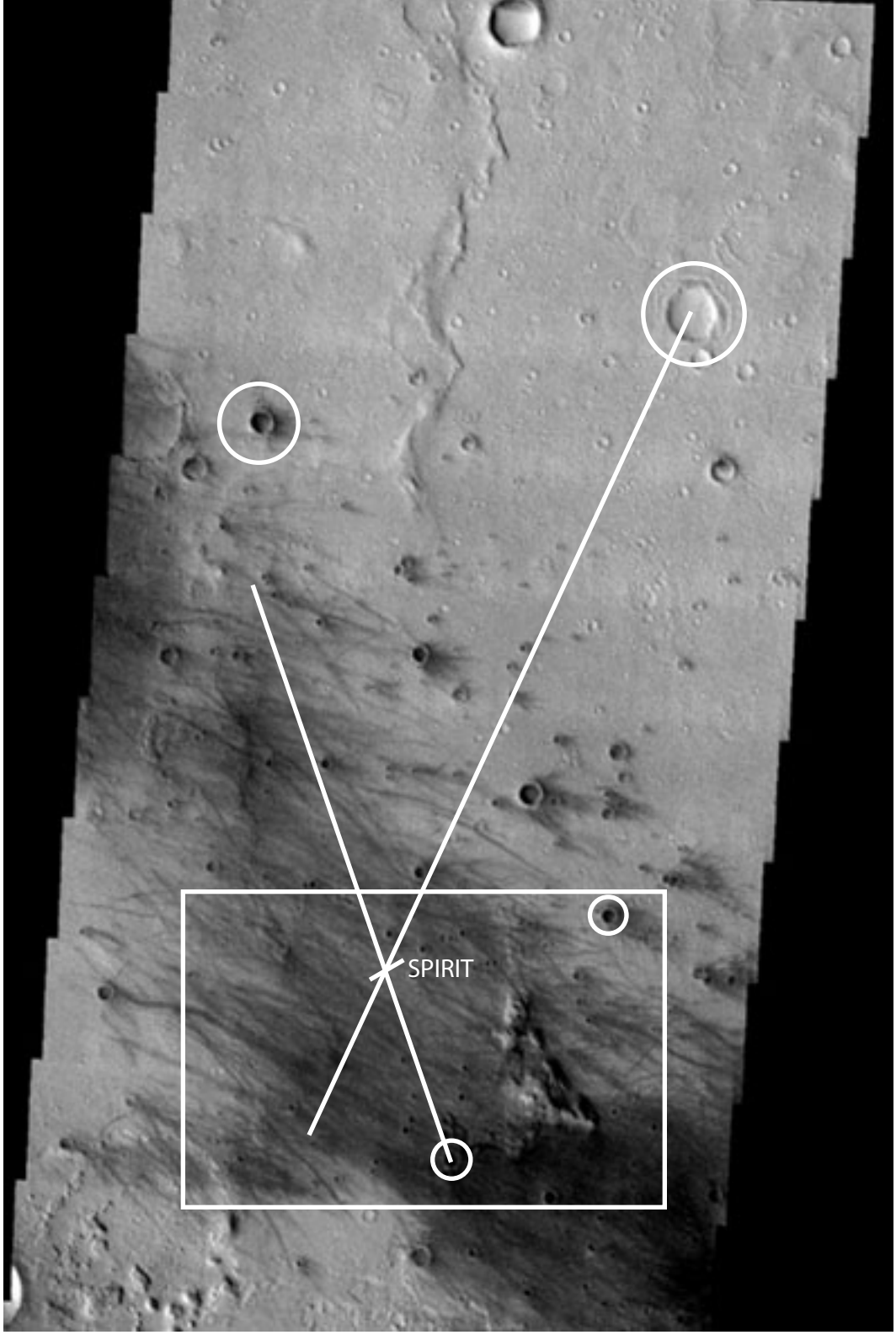
Step 4: *Find Range & Bearing to Spirit From Largest Crater*

3



Thermal Emission Imaging System (THEMIS)

Visible Camera



Actual Distance Between Two Largest Craters in Image #2:	6076	m
Measured Distance Between Craters in Image #3 **(Circle them and measure!)**:	43	mm
Scale of Image #3 **(Actual Distance / Measured Distance)**:	141.3	m/mm

Step 1: *Find the Scale of the Current Image*

Actual Range from Largest Crater in Image #2 to *Spirit*:	4100	m
Measured Range in Image #3 **(Actual Range / Scale of Image #3)**:	29.0	mm
Bearing from Crater in Image #2 to *Spirit* ***(NOW FIND SPIRIT!)***:	343	degrees

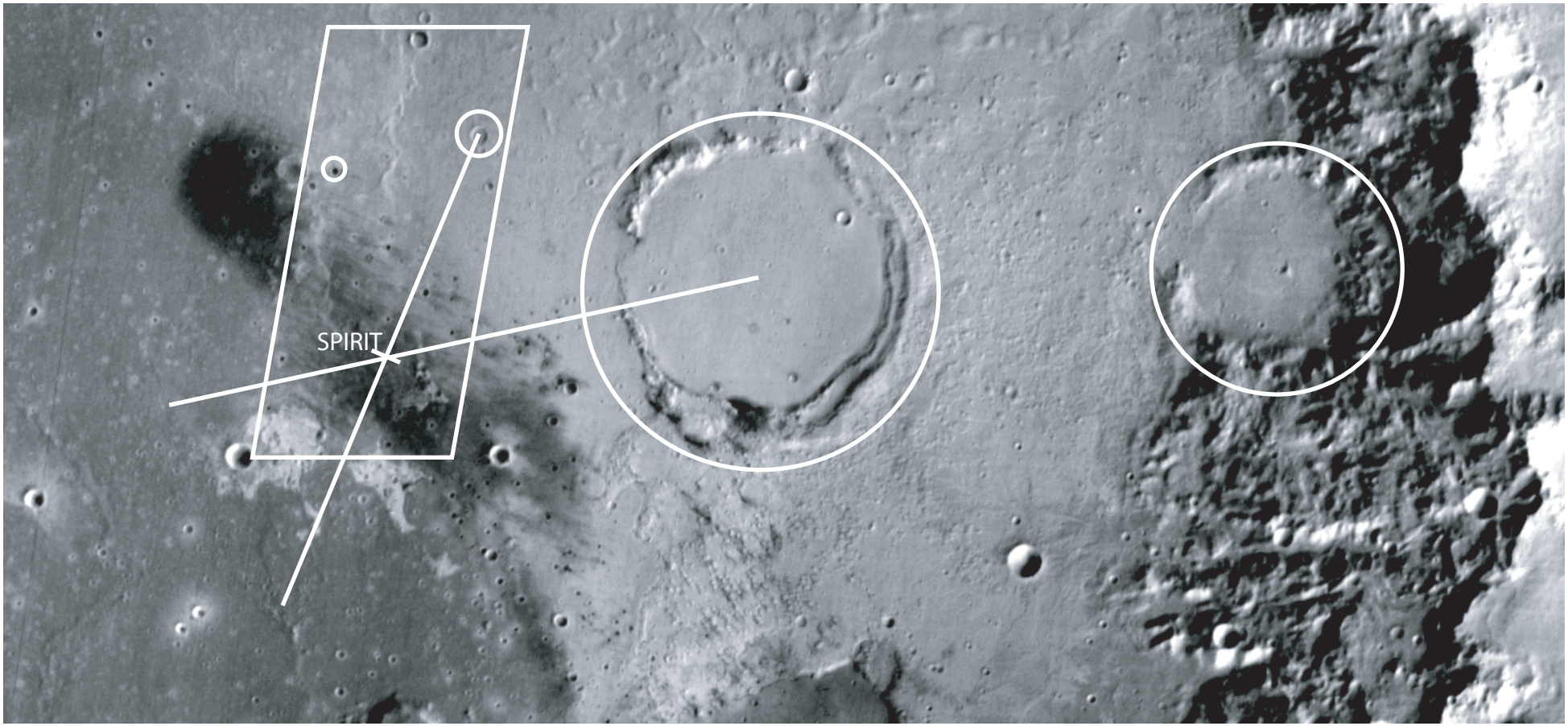
Step 2: *Find Spirit In the Current Image*

Measured Distance Between Two Largest Craters in Image #3 **(Circle and measure!):**	66.0	mm
Actual Distance **(Measured Distance x Scale of Image #3)**:	9325.8	m

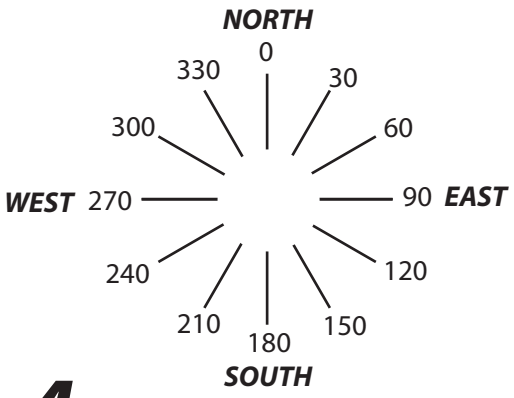
Step 3: *Find Actual Dist. Between Two Largest Craters*

Measured Range to *Spirit* from Largest Crater in Image #3 **(Measure it!)**:	108	mm
Actual Range **(Measured Range x Scale of Image #3)** to *Spirit*:	15260.4	m
Bearing to *Spirit* from Largest Crater in Image #3 **(Measure it!)**:	203	degrees

Step 4: *Find Range & Bearing to Spirit From Largest Crater*



Thermal Emission Imaging System (THEMIS)
Infrared Camera (Colors Inverted)



Actual Distance Between Two Largest Craters in Image #3:	9325.8	m
Measured Distance Between Craters in Image #4 **(Circle them and measure!)**:	23	mm
Scale of Image #4 **(Actual Distance / Measured Distance)**:	405.5	m/mm

Step 1: *Find the Scale of the Current Image*

Actual Range from Largest Crater in Image #3 to *Spirit*:	15260.4	m
Measured Range in Image #4 **(Actual Range / Scale of Image #4)**:	37.6	mm
Bearing from Crater in Image #3 to *Spirit* ***(NOW FIND SPIRIT!)***:	203	degrees

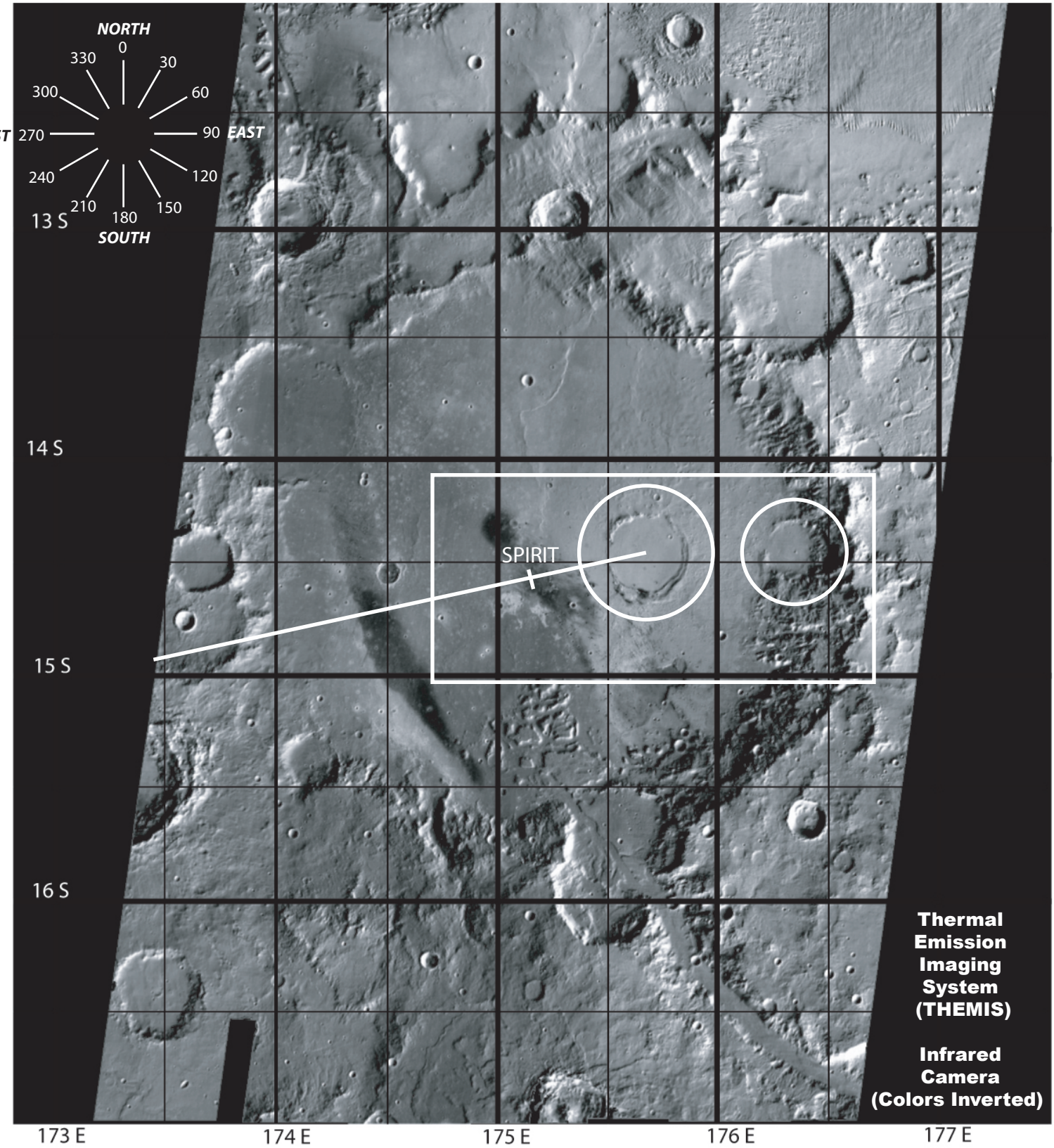
Step 2: *Find Spirit In the Current Image*

Measured Distance Between Two Largest Craters in Image #4 **(Circle and measure!):**	80	mm
Actual Distance **(Measured Distance x Scale of Image #4)**:	32440	m

Step 3: *Find Actual Dist. Between Two Largest Craters*

Measured Range to *Spirit* from Largest Crater in Image #4 **(Measure it!)**:	61	mm
Actual Range **(Measured Range x Scale of Image #4)** to *Spirit*:	24735.5	m
Bearing to *Spirit* from Largest Crater in Image #4 **(Measure it!)**:	258	degrees

Step 4: *Find Range & Bearing to Spirit From Largest Crater*



Actual Distance Between Two Largest Craters in Image #4:	32440	m
Measured Distance Between Craters in Image #5 **(Circle them and measure!)**:	27	mm
Scale of Image #5 **(Actual Distance / Measured Distance)**:	1201.5	m/mm

Step 1: *Find the Scale of the Current Image*

Actual Range from Largest Crater in Image #4 to *Spirit*:	24735.5	m
Measured Range in Image #5 **(Actual Range / Scale of Image #5)**:	20.6	mm
Bearing from Crater in Image #4 to *Spirit* ***(NOW FIND SPIRIT!)***:	258	degrees

Step 2: *Find Spirit In the Current Image*

WHERE IS SPIRIT?

Latitude: 14.6 S **degrees** **Longitude:** 175.2 E **degrees**