

AL4618	Starboard Transcri	Julia Howell	KEY: PS: Partially Sedimented ;HS: Heavily Sedimented; P: Pillows; L: Lobates; S: Sheets; T:Talus		
Time	Depth	X	Y	Heading	Notes
13:54					Just got to the bottom, landed on a pretty young sheet flow. So we have a bit of a slope out of the side. Sheet flow is jumbled, very little sediment, pockets of sediment. It is coming up to a peak, sitting on top of a fissure. There is some lobate in the sheet flow, most likely the sheet flow covered the lobate.
14:01	1682	10567	8547	6	Taking sample 1, of a light to partially sedimented jumbled sheet flow, placed into box 7c. We are at waypoint 1, on top of this big tumulus.
14:09					Crossing over this tumulus, a larger fissure seems to be where all these sheets are coming from. Contact from light to partially sedimented sheets to heavily sedimented lobates. It seems as if the lobes are flowing downslope from the high. Otherwise it is pretty flat, altitude is 5.4 meters.
14:10					Starting to see more pillows, sediment across the straitons in the pillows, going up a hill, more pillows, a gentle slope.
14:14	1682	10539	8671	333	Stopping to take a sample 2 , heavily sedimented lobate,
14:20				334	Going up a slope, lava has changed to partially sedimented pillows with a good dusting of sediment on top through striations. Pillows are flowing down hill, to the south east from my perspective. See a collapse feature perpendicular to our track
14:23					At waypoint 2, lava morph is PS P, elongate and bulbous, average width is about 1 meter. Going to take a piece. We are right on the edge of a fissure (oh wow!). So what I am seeing: an edifice that has been split, the interior is of P with a bit of T, width is about the width of Alvin. Slope is pretty steep, probably the coolest thing I have ever seen. The walls are of P, manganese coating, I can see a rim. Fissure running N10E from 234.
14:27					Stopping to take sample 3, right on top of waypoint 2, we are grabbing a sample of a broken P with a manganese coating. Sediment is less, pockets.
14:31	1669	10520	8740	221.7	Just finished sample 3, broken P, sitting on top of fissure, about the width of Alvin. Goal is to follow fissure to see where it crosses lobates, which may be older.
14:36				70	Transitioned back into L, trying to follow fissure, collapse out of the starbd window, it is perpendicular to that. Cannot make out interior of collapse. Another collapse. Could not follow fissure, so we are moving on to waypoint 3.
14:38					Heading back over the fissure, could be a larger collapse, interior is of T, larger pieces of L, HS across.

14:39				40	Seeing the small crack, 1 m wide, interior is T., 45E from bearing.
					On our way to waypoint 3, across the graben. Collapsed lobates with bathtub rings, looking for graben dropoff. Still HS. Looking at tube, see inside, PILLARS.
14:43					Looking at large pillars, in a collapse, one of the pillars looks like a christmas tree, HS something, cannot make out Lava Morph. Maybe T?
14:44					Big drop off for the graben, cannot see bottom. Fault wall made out of L.
					Flying across graben. Interior is of lobates (again), HS, see fissures, maybe a P or two. Going to take a piece. Fissure, heading is 40, perpendicular to track. P, larger P with directionality, cannot tell which direction pillows are flowing, but they are perpendicular to our track. Sediment is in straiations and a dusting across the top. Stopping to take sample 4. Couple of fissures in the area. Pillows have manganese coating. Larger fissure out my window, 4 meters wide, broken pillows and lobes. We are setting down to take a sample just to the west
14:45	1686			40	of this fissure.
14:53	1692	10683	8888	120	Sample 4, piece of P, PS with good dusting across pillows, biology on top. Fissure parallel to our heading, heading on to waypoint 3 which is across the graben.
14:59	1690			40	Crossing over a fissure or fracture, two are kind of coming together into one. Fracture is 45 east of our heading. Lava morphology has transitioned into L with a couple of P, sediment across the pillows, HS.
15:00				40	Sheets, P on either side, P are in place. S are definitely folded, S on top of the P, S has PS, younger than P, downslope. Going down a ridge. S stop, lots of collapse, bathtube rings, L on top, transition back into L, collapse on starboard side, no bathtube rings, really HS.
15:02				75	Taking sample 5 of lobate. Right on top of a collapse. Coalesced.
15:10	1691	10759	8965		Sample 5 is of a large piece of lobate deposited in basket 6b. Just passed a smaller zone of collapse on our way to waypoint 3
15:13				45	L with good dusting on top. Contact into pillows. Large drop off out of starboard side. 45 E of heading. Heading up a constructional slope of pillows which are going down slope, pillows have a light dusting across the top, biology growin in. P are 1 m across 3 m long. With small P in between. Climing edifice, which should be faulted.
15:21	1684	10780	8998		Sample 6 place in 2, large sample of P. HS, moving to waypoint 4.
15:25				146	Pretty steep slope out of the starboard window, if I had to guess we are flying over one of these large faults / fissures, actually looks constructional

15:27					Fissure of some sort, L, pockets of S. Back in collapse zone, more inflated than we were looking at before.
15:29					Starting to see pillows, dusting across straitions but not as heavy, do look younger. More bulbous P
15:31					More P, same S from the whole time. Larger, more bulbous, not a lot fissures. Seeing L, fingers coming off of them.
15:33					Coming up a crack, I can see a breakoff, seeing vertically tilted P and L, sediment is L, seeing crack, wall of P with a few S and T. Coming up the side of the wall.
15:35					On top of the wall, seeing a lot of P, manganese coating, lighter S, flying over another fissure.
					Contact to lobates, sediment is across the lobes
15:37				202	P and L, a large incline outside of window, we can see the top. Seeing smaller fissures, 10-20cm wide. Looking at L, PS, dusted across the top.
15:38					Looking at a sheet flow, contact between S and L. Looks like S is undernate L, blocks broken. Sheets are at 45 degree angles, 3 meters thick, back into lobate. We just crossed over a big eruptive vent, blocks of sheet have been uplifted. Pushup structure is in the same orientation as the "stringbeans" we saw on the map.
15:43					We are climbing, trying to see if lava is draped over a fault. Looking at P and L, large and spherical P. Flying over a large crack, fingering of L, PS. Crack is full of talus. At waypoint4. Wall of crack is L.
15:54	1672	10817	8694		At waypoint4, L, PS, just finished taking sample number 7, placed into basket 7b. Piece of a P, right now we are sitting on top of PS P, seem to be part of the same lobe that is coming from the south drapped over the graben wall.
15:57					L look fresher. A large crack, probably the fault we want to follow to Waypoing 5. Wall is L. See larger piece of L as talus.
15:58					In the fault, HS L, pockets are coalesced, not seeing a lot of pillows. Looks constructional. Flowing from South.
15:59					Sheet flow, hackly, maybe jumbled. Sediment on top of L. PS. Large crack. Another push up things we saw earlier. Not as large of blocks, more broken up in this area. Flying over the large fracture right now. Thickness is about 5 meters of flow. Pretty talusy on top.

16:01				47	10 degrees east of the heading, looking at this fissure. I am still looking at sheets, John is looking at lobates. Expecting to see some lobates. This looks pretty broken up. I think it is in place, I am not sure if sheets can auto-brecciate, but if they could this would be my interpretation of them. See contact to lobates. The sheets are flowing on top of the lobes. Lobes are heavily sedimented, pretty flat. I think the lobes were uplifted first and the sheets were emplaced on top of them. Contact to older folded sheets. Looking back at the tumulus, I can see the break point, at that point I am seeing these heavier sedimented, ropey folded sheets.
16:11					Just finished taking sample 8, piece of folded sheet flow, pervasive sediment cover looks to be heavy, couple centimeters thick. So in summary, flew over the tumulus with uplifted sheet flows, into a contact with folded heavier sediment sheet flows that seem to be flowing on top of heavily sedimented pillows. Sediment cover is probably not reliable. Heading on to waypoint 6
16:14	1681			103	L, same sediment we have been seeing the whole time. Flying along another tumulus. L are more extensive. Broken piece of sheets, fissure, parallel to heading, sheets are uplifted. This entire area may be a vent. Mostly erupting sheets.
16:16					Uplifted sheet flows paired with flat sheet flows. More uplifted blocks of sheets. Small fissure running through the center of them. Surrounded by lobates. P-HS lobate. Sheets are the same sediment cover, sheets flowing on top of lobates. Very thick, 10 centimeters thick.
16:19					John thinks the sheets and lobates are intimately mixed, same sediment cover. Seeing L as far as I can see.
16:21					More P, seeing a P-L transition. P is flowing on top of L. Lighter sediment cover. Now looking at L. L at the base of a wall or something, I think we are getting ready to come up over something. Maybe 4 meters high.
16:23					Just moved into sheets, lava looks pretty broken up. Seeing a crack. Probably another vent / tumulus. Broken P and L. PS. Folded sheet flow. Very large pieces (2m) of something that is broken up in the fissure, could be sheet. Fissures are parallel to each other. Walls and fissure and walls and fissure, etc. Still looking at sheets. Inside fissures are talus. Sheets are layered on top of fissures, these sheets are not uplifted as we saw before. Contact back into lobates. Fissures are about a meter to 2 across. Sediment cover is about the same. Lobes are flowing down hill

16:26	1678				Uplifted block, with L. Uplifted block is of sheets, it is getting pretty steep. Probably another fissure. Now looking at L. HS(?)
16:29					Contact from L to S, another uplifted area. Right side of crack looks like sheets are coming up to the top. Running Perpendicular to very large crack. Cannot make out what is in the bottom. Taking the piece of the sheets.
16:36		11256	8701	28	Just finished taking sample 9, piece of sheet flow from tumulus. At waypoint 6, heading to waypoint 8.
16:38					Lost visibility
16:39	1667				L, same sediment cover. Contact to S. Ropy sheets. Pockets of sediment in areas.
16:41					Going over fissures and cracks of sheets. Contact to L. Same sediment cover
16:43					Contact to large bulbous pillows. P have sediment across striations, not as thick in pockets, but still present. Flowing down slope. More pillows. Crossing over a crack. Flying over a fissure, maybe 7 meters wide, large P leading up to this crack. Going to take a sample.
16:46	1678				On top of a fissure, going to take a sample (not sure where). What I can see of this broken wall: pillows. Visibility has decreased.
16:52		11363	8849		Just finished taking sample 10, which is a pillow, think it is part of the AK eruptive vent. Going to waypoint 7.
16:54					Back into L, same sediment cover we have been seeing the whole time, not sure where the contact into pillows occurred.
16:57					starting to see Talus, on the side of a wall, I think we are going to move from waypoint 7 to waypoint 8
16:59					Heading across the graben, expecting to see a contact from P to L. Could be heavier sedimented.
17:00					P on top of L. Seeing a sloping up, maybe a large fissure? Definitely seeing P. It is a wall and a crack.
17:02					L of the same sediment cover almost the entire time in the graben. More P, P on top of L. General thinking: the AC eruptive fissure is forming P and ours is forming L.
17:04					Collapsed sheet flow, piece of sheet inside. Maybe a deflated lobate, maybe a ropy sheet flow. Coming up on another tumulus. Still deflated L, same sediment cover
17:06					Seeing a drop off, cannot see other side or bottom. Maybe bottom is L, cliff is 5 meters high, large piece of L down below

17:07				Seeing a contact between L and L? Less sedimented L on top of heavier sedimented L. Crossing another stringbean structure. Jumbled sheets on to pof lobes. And a vertical wall, pretty much.
17:13	1684	11501	8678	Just finished collecting sample 11 from a sheet flow from a tumulus structure. Going to keep heading toward the souther graben wall.
17:16				Crossing over a big gap right now, 7 meters wide, cannot see bottom. Wall is made up of sheet flows. Turning to waypoint 9. Alos lost visibility.
17:20				Gained visibility, sedmiented L.
17:22				Lost visibility, again.
17:23				Regained visibility, looking at wall. Consists of S and P.
17:24				S are flowing at an angle down, not very good visibility. Transitioned into jumbled sheets. 9 meters off the bottom, approaching the channel. Decreased visibility. Folded sheet flows, PS, Bigger blocks of sheets not in place.
17:27				Fresher folded sheet flows on top of heavier sedimented less folded sheet flows.
17:33	1691	11607	8752	On top of younger sheet lava, we are going to follow channel
17:35				Sheets are really folded in the channel, partially sedimented.
17:37				At the narrowing point of the channel, walls are of sheet flows, the bottom is sheet with some talus. Coming out of the channel, big blocks of sheet flows (about a meter). Talus, we have come out of the channel.
17:39				Lobates we saw in the graben are on top of the channel. See a collapse
17:40				Large drop off, we are coming back into the channel. Broken lobes, starting to see sheets again.
17:42				In the channel, going to follow until we see northern fault graben. The lobates acutally are in place in the channel. They look older.
17:43				Still in the channel, partially sedimented folded sheet flows. Trying to decide which way is down.
17:45			29	Climbing out of the channel, broken pieces of lobate on the wall.
17:47	1643			Climbing the northern graben wall, looking at P, top is PS P, look older, not very glassy. There is sediment in the striations, but not very robust. Coming up another wall, seeing a big drop off.
17:48				Very deep fissure we just flew over, pillows on either side.
17:49				Still looking at P on the starboard, still steep slope, tectonic.
17:50				Coming up on another big drop off, not sure what this is.
17:51	1674			Found the pillows inisde of this crack, dropping off again. Collapse features full of PS T

17:52				Sheet flows, looks to be flowing around the pillows, looks like a jumbled sheet flow, It is getting more sheety as we go. Sheets are flowing on top of pillows.
18:02	1677	11639	8946	Just finished collecting sample 13, deposited in box 4a. On our way to waypoint 11
18:05	1675			Looking at a very flat sheet lava, sediment is blotchy. Sheet is going across pillows. Bulbous pillows.
18:07	1676			Sloping off on starboard side, looks constructional. Taking a piece of the pillow field.
18:15	1678	11614	9025	Finished taking sample 14 of pillows, placed into box 1a.
18:18	1681			Transitioned into a sheet flow, jumbled sheet flow, maybe floded, PS, sheets are on top of pillows.
18:20				Seeing more sediment in the pockets, going to take a sample of sheets. I collapsed lobates. Sheets are on top of lobates.
18:21	1684			Big drop off up ahead, flow is coming down slope, pillows, less sediment. The dollop is a pillow mound
18:22	1681			Since last sample, we went through sheets, collapsed lobates with sheets inside and then climbed the dollop, which is a pillow mound. Taking a sample.
18:30	1681	11564	9151	Finished taking sample 15 off of pillow mound.
18:36	1686			Heavily sedimented lobates.
18:37				When through an area of Talus, back into HS L and very large P
18:38	1685			Lava morphology is primarily P, elongate and bulbous. Sediment across striations.
18:41	1686			P are becoming more elongate and tightly packed
18:44	1692			Trying to find the P-L contact. Found it. HS.
18:45				Seeing a fissure of sorts, sheets, wall on starboard side.
18:46	1689			Jumbled sheet flow, there was a big crack and contact and now we are looking at sheets. This is this odd feature we have been trying to get to.
18:52	1689	11369	9342	Just collected a sample of a sheet flow, and it ended up dropping on top on the two forward most baskets.