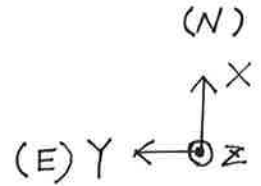


335 U1256D  
Run12 RCJB Rock A  
151600/151800

SCRAPE

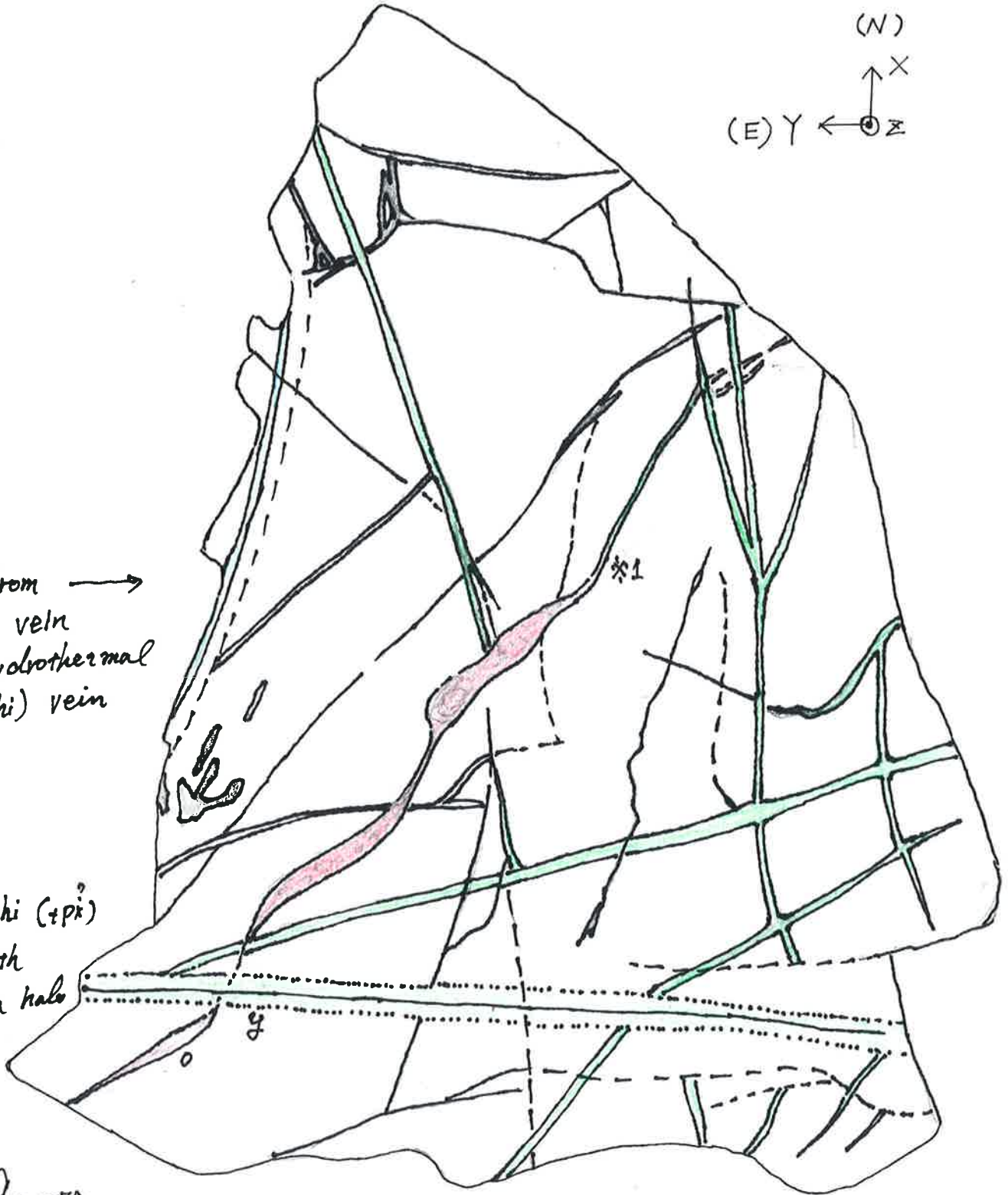


SPCM3224591



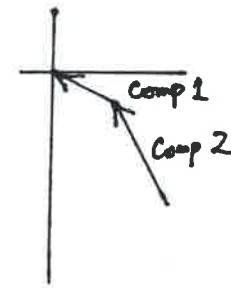
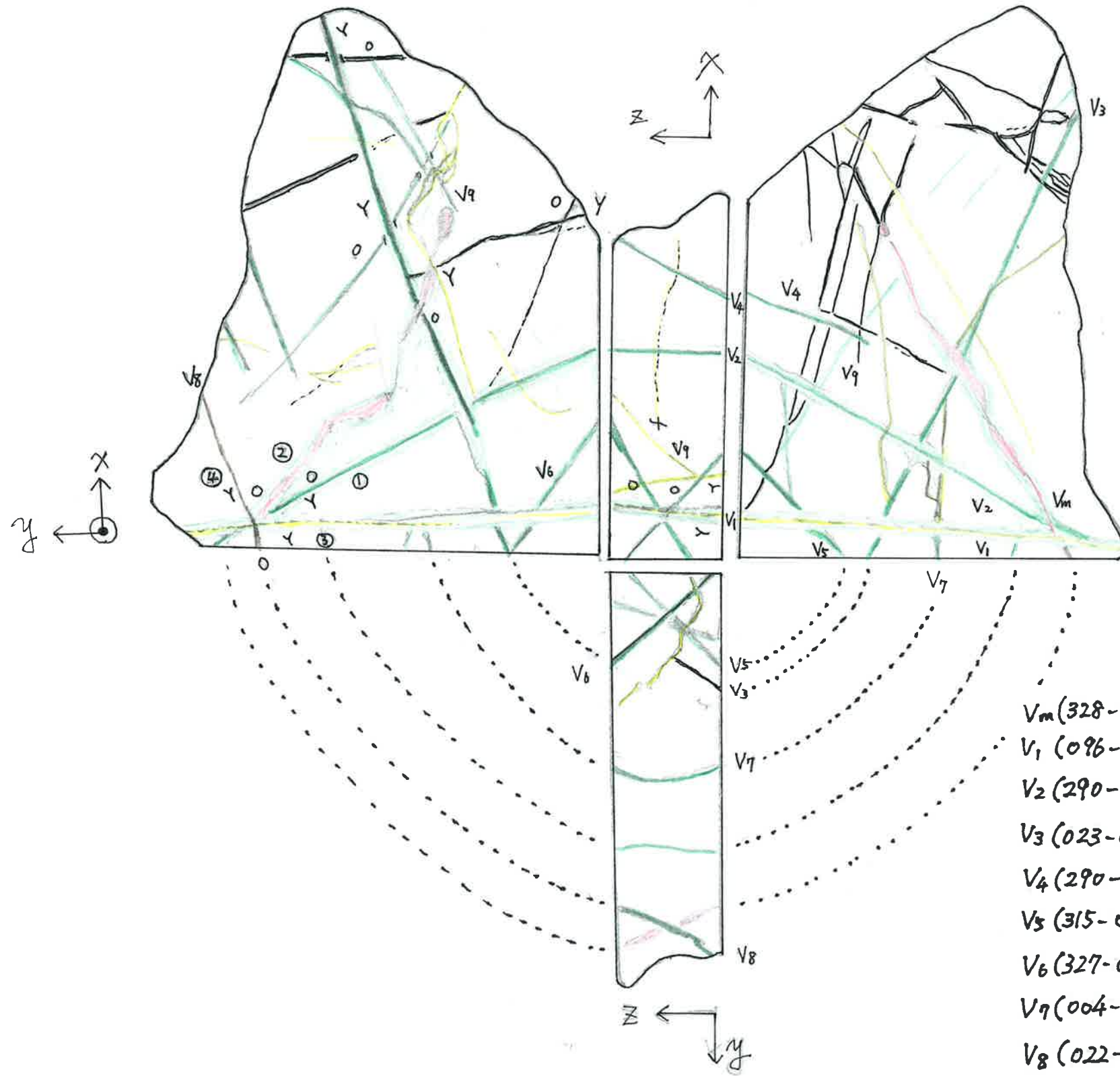
\* Transition from magmatic vein to hydrothermal (amphi) vein

Young amphi (±px) vein with alteration halo



by Pyro Amer

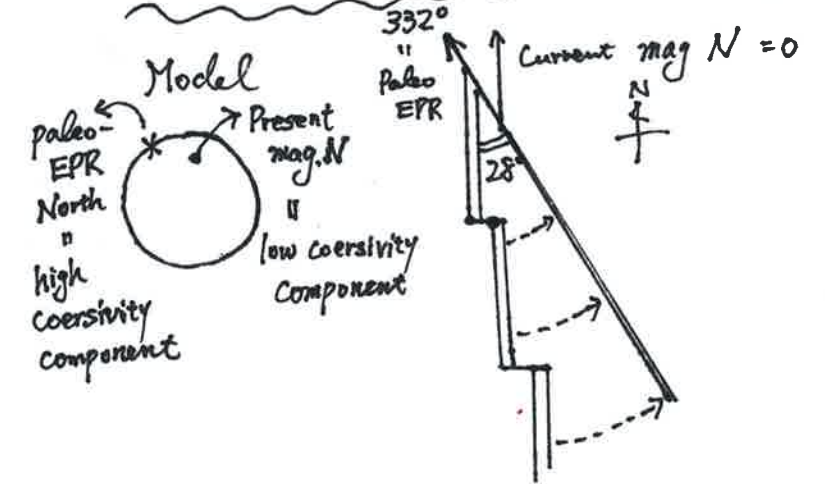
Run 12 RCJB Rock A  
1516-1518



Expedition 335 Onboard P-mag result (Morris & Am)

Comp 1 Low coersivity 5~20 mT  
334.1/27.7 n=3 MAD=2.7

Comp 2 High coersivity 30~100 mT  
0007.7/17.4 n=5 MAD=2.4  
(Ch RM)



Procedure of restoration

- ① rotate CCW by 30° about 220-0°
- ② rotate CW by 29° around 000-90°
- ③ rotate by 180° around 000-0°

	dip dir - dip	Restored S-pole
V <sub>m</sub> (328-0, 090-69)	058 - 72°	166-39
V <sub>1</sub> (096-0, 000-86)	006 - 86°	312-4
V <sub>2</sub> (290-0, 000-88)	020 - 88°	145-4
V <sub>3</sub> (023-0, 270-75)	293 - 76°	240-25
V <sub>4</sub> (290-0, 000-63)	020 - 64°	129-22
V <sub>5</sub> (315-0, 270-41)	225 - 51°	008-15
V <sub>6</sub> (327-0, 090-30)	057° - 34°	114-61
V <sub>7</sub> (004-0, 270-89)	274 - 89°	217-37
V <sub>8</sub> (022-0, 270-63)	292 - 65°	238-13
V <sub>9</sub> (037-0, 000-45)	307 - 59°	251-6

by Pigo Amer

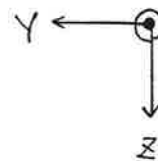
JUNK 5 RC1 ROCK B

335 U1256D  
Run12 RCJB Rock B  
151600/151800

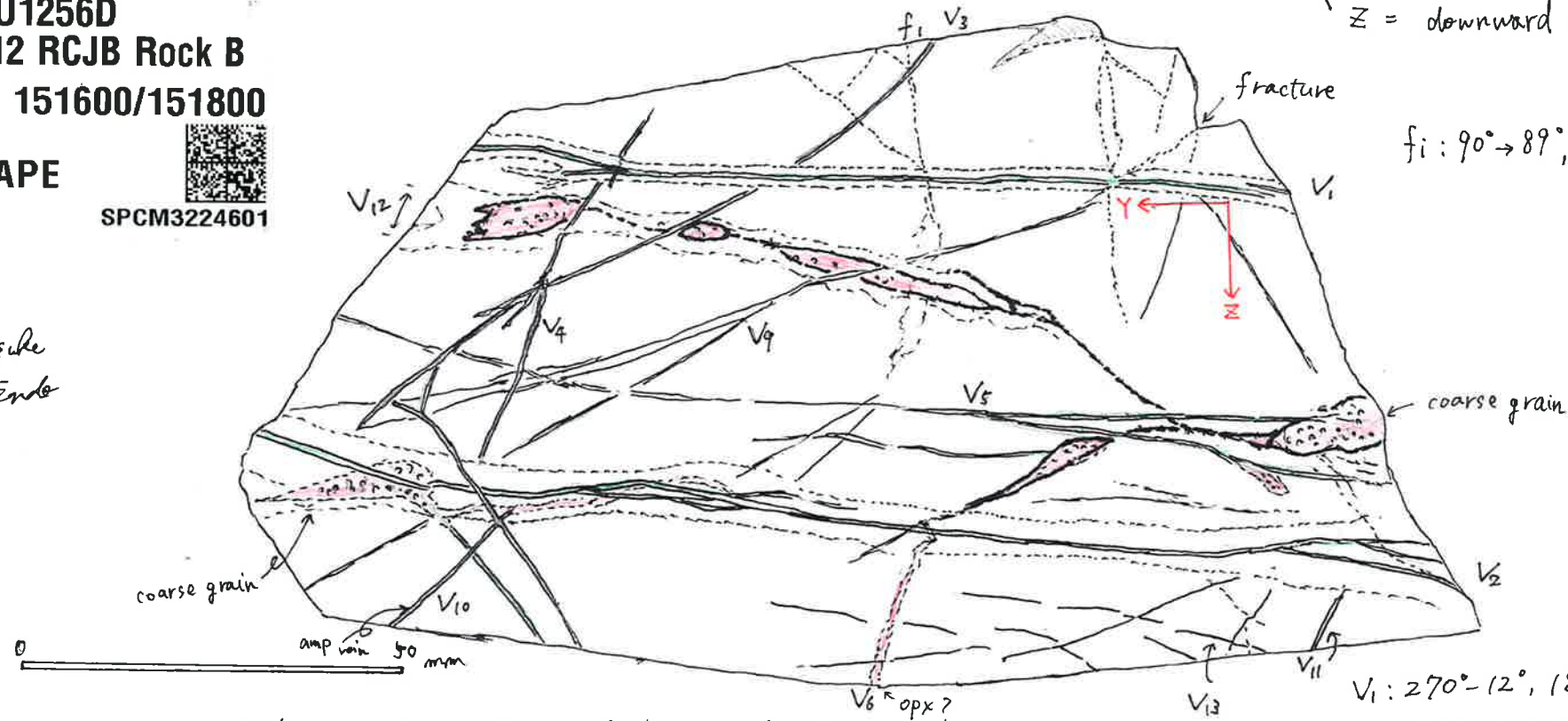
SCRAPE



by Dave  
Endo



X = 0°, (N)  
Y = 90°, (E)  
Z = downward in this Figure



$f_1: 90^\circ \rightarrow 89^\circ, 196^\circ \rightarrow 0^\circ$

V<sub>1</sub>: dark green planar vein + dark green alt. halo

V<sub>2</sub>: dark green curved vein + ~~dark green~~ gray alt. halo

V<sub>3</sub>, V<sub>4</sub>, V<sub>5</sub>: dark green vein

V<sub>6</sub>: partly gray colored dark green irregular vein

V<sub>7</sub>: dark green - black surface

V<sub>11</sub>: 090° - 52°, 187° - 0°

V<sub>12</sub>: 270° - 25°, 180° - 11°

V<sub>13</sub>: 270° - 28°, 145° - 0°

V<sub>1</sub>: 270° - 12°, 180° - 28°

V<sub>2</sub>: 270° - 14°, 180° - 20°

V<sub>3</sub>: 090° - 32°, 162° - 0°

V<sub>4</sub>: 090° - 63°, 193° - 0°(?)

V<sub>5</sub>: 270° - 5°, 180° - 7°

V<sub>6</sub>: 090° - 63°, 191° - 0°

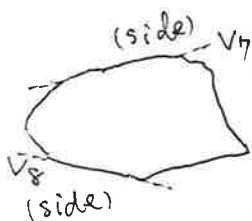
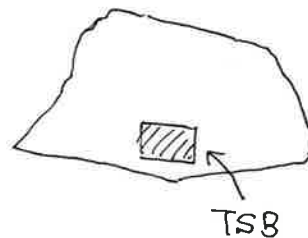
V<sub>7</sub>: 090° - 2°, 0° - 10°

V<sub>8</sub>: 270° - 16°, 180° - 8°

V<sub>9</sub>: 090° - 27°, 180° - 36°(?)

V<sub>10</sub>: 090° - 41°, 140° - 0°

(1cm back side)



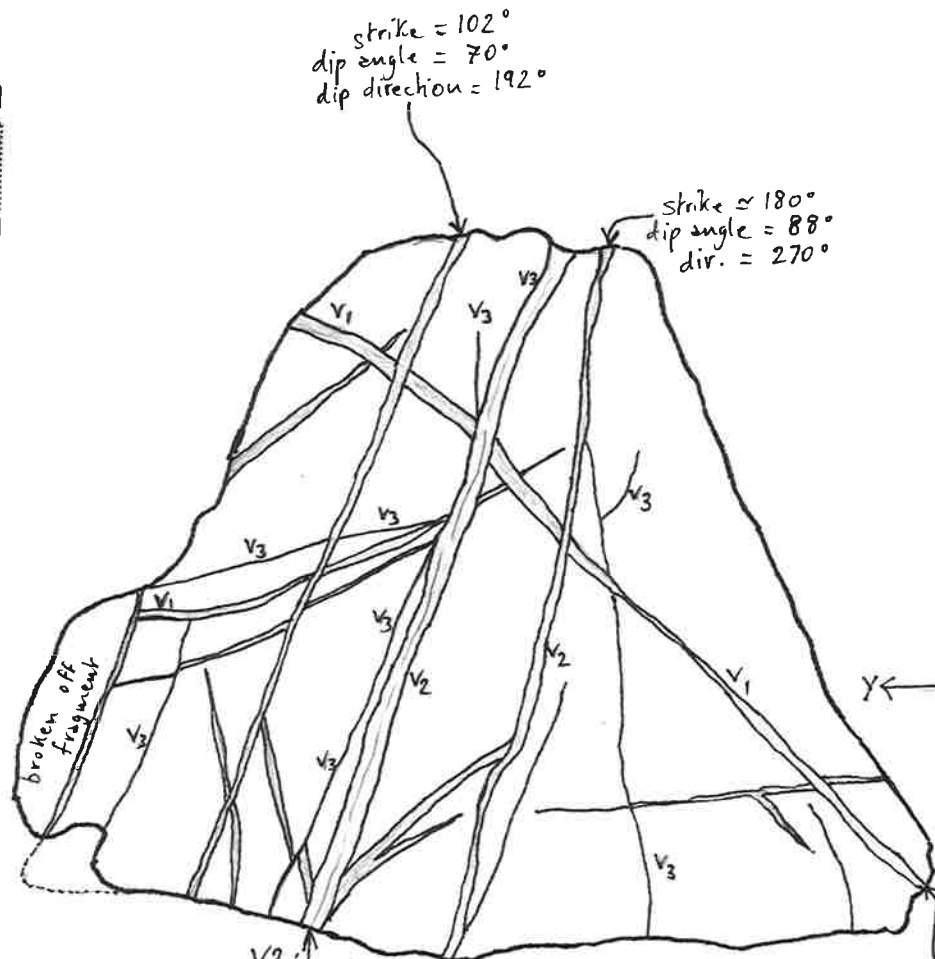
335 - U 1256 D - RUN 12 - RCJB - ROCK C

335 U1256D  
Run12 RCJB Rock C  
151600/151800

SCRAPE



SPCM3224611



(V1) discontinuous, dark green vein with halo (1mm)

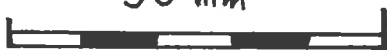
(V2) continuous, dark green vein with halo (3mm)

(V3) whitish, very thin (0.1 mm?)  
plag. + epidote (?)

dip angle 1 = 50°  
dip direction 1 = 270°  
dip angle 2 = 15°  
dip direction 2 = 180°

dip angle 1 = 68°  
dip direction 1 = 090°  
strike = 180°

50 mm



335 U1256D

Run 12 RCJB

ROCK C

(polished)

V<sub>1</sub>: dark green curved vein with  
090°-42, 180-10 dark green halo

V<sub>2</sub>: dark green planar vein  
270°-68°, 030-0°

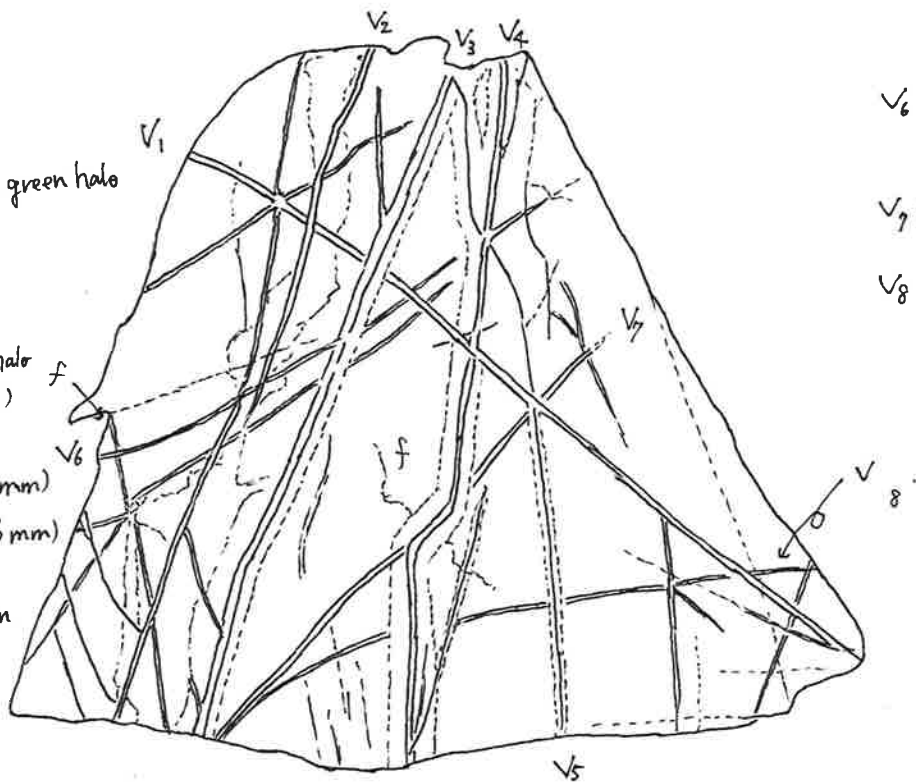
V<sub>3</sub>: dark green planar vein  
with dark green halo  
270°-68°, 005°-0° (3mm thick)

V<sub>4</sub>: dark green curved vein  
with dark green halo (2mm)  
270°-84°, + light green halo (6mm)  
010°-0°

V<sub>5</sub>: white colored mineral filling vein  
with dark green halo  
(2mm)

090°-86°, 015°-0°

50 mm



V<sub>6</sub>: dark green curved vein  
with halo  
(1.5mm thick)

V<sub>7</sub>: dark green curved vein with halo  
270°-40°, 350°-0° (1.5mm thick)

V<sub>8</sub>: dark green curved vein  
270°-15°, 015°-0° (1mm thick)

by Daiyuke Endo

335 U1256D

RUN 12 RCJB

ROCK D

**335 U1256D**

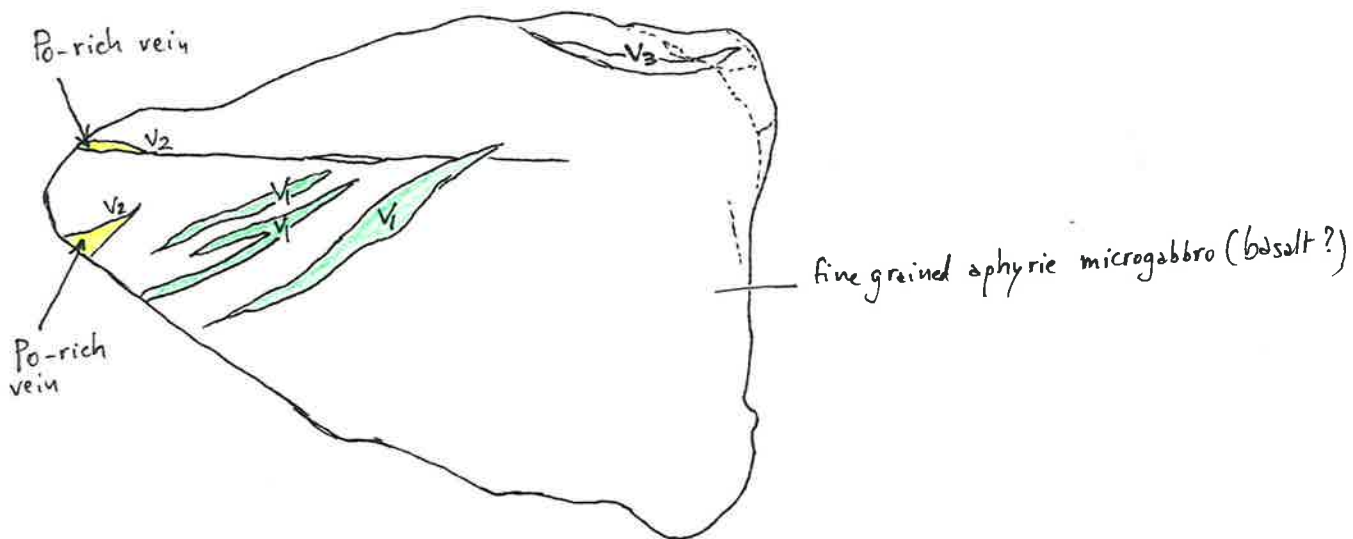
**Run12 RCJB Rock D**

**151600/151800**

**SCRAPE**



SPCM3224621



50 mm

V<sub>1</sub>: fine to medium grained assemblage of plagioclase and amphibole grains

V<sub>2</sub>: sulfide-rich (pyrrhotite?), plagioclase-rich ± oxides (?)

V<sub>3</sub>: plagioclase-rich vein

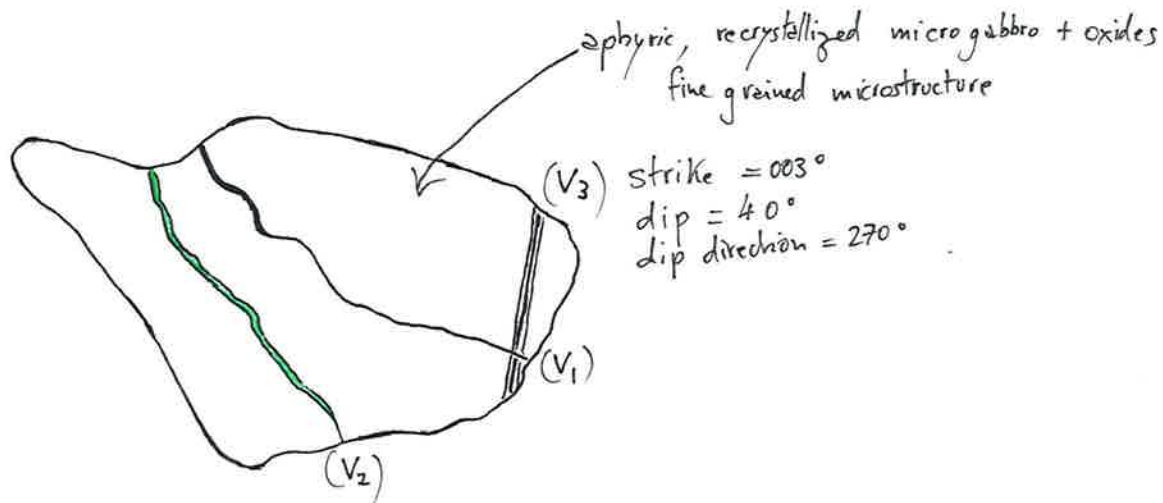
335 U1256D Run 12 RCJB Rock E

335 U1256D  
Run12 RCJB Rock E  
151600/151800

SCRAPE



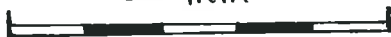
SPCM3224631



(V<sub>1</sub>): magnetite-rich vein

(V<sub>2</sub>): (opx-rich?) dark green vein

50 mm



335 - U 1256 D - RUN 12 - RC JB - ROCK F

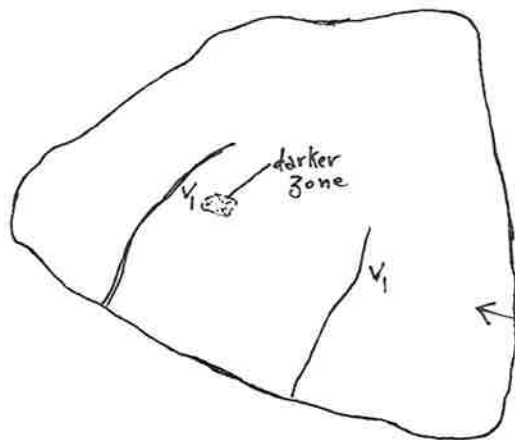
335 U1256D  
RUN12 RCJB Rock F  
151600/151800

SCRAPE



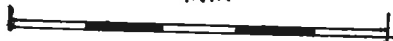
SPCM3225151

(v<sub>1</sub>): thin whitish veins



aphyric, recrystallized microgabbro

50 mm






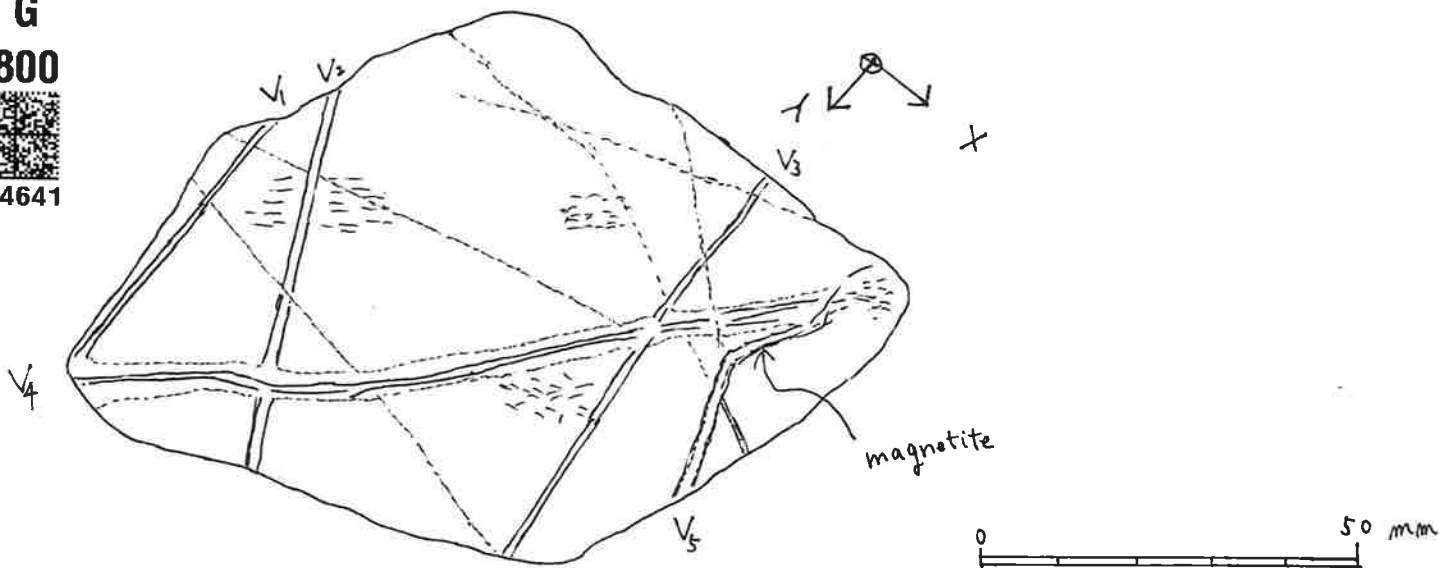
335 U1256D  
 Run12 RCJB Rock G  
 151600/151800

SCRAPE



SPCM3224641

 slight SPO  
 marked by plagioclase  
 laths



V<sub>1</sub>, V<sub>3</sub> : dark green planar vein

V<sub>2</sub> : blueish green planar vein

V<sub>4</sub> : light gray planar vein + blueish green alt. halo

V<sub>5</sub> : light gray + dark green + yellowish green (epidote?) irregular vein

V<sub>1</sub>: strike = 116°, dip angle = 90°, dip dir = 26°

V<sub>2</sub>: strike = 93°, dip dir = 183°, dip angle = 80°

V<sub>3</sub>: strike = 270°, dip dir = 0°, dip angle = 88°

V<sub>4</sub>: strike = 40°, dip angle<sub>1</sub> = 27°, dip dir<sub>1</sub> = 0°  
 dip angle<sub>2</sub> = 21°, dip dir<sub>2</sub> = 270°

by Daisuke Endo

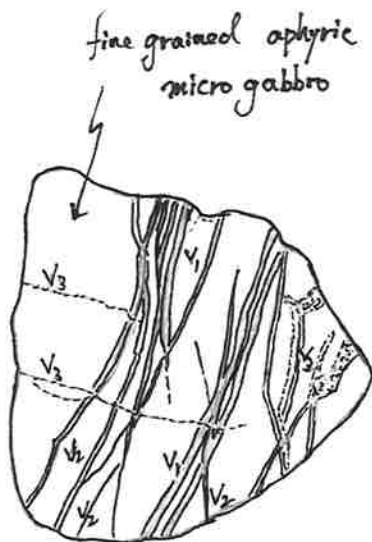
335 - U 1256 D - RUN 12 - RCJB - Rock H

335 U1256D  
RUN12 RCJB Rock H  
151600/151800

SCRAPE



SPCM3225001



(V<sub>1</sub>) mm-wide, grey brownish, granular veins

(V<sub>2</sub>) dark green, thin vein

(V<sub>3</sub>) whitish veins

50 mm



335 - U1256 D - RUN 12 - RCJB - ROCK I

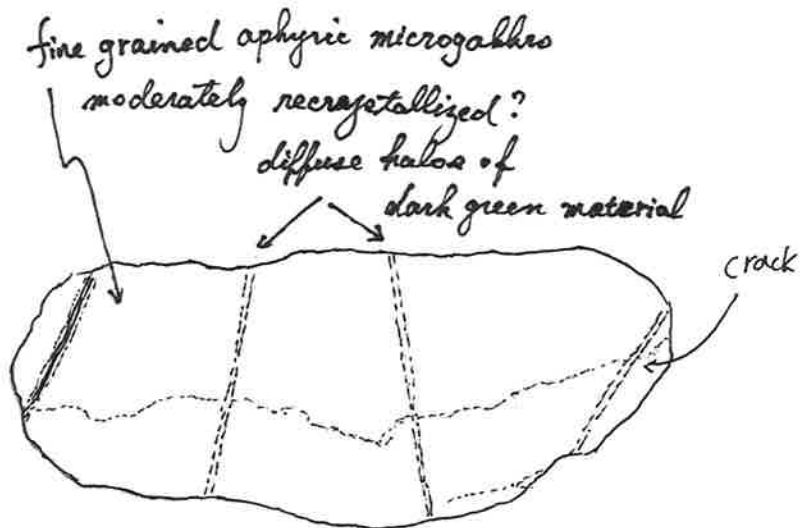
335 U1256D  
RUN12 RCJB Rock I

151600/151800

SCRAPE



SPCM3225011



50 mm



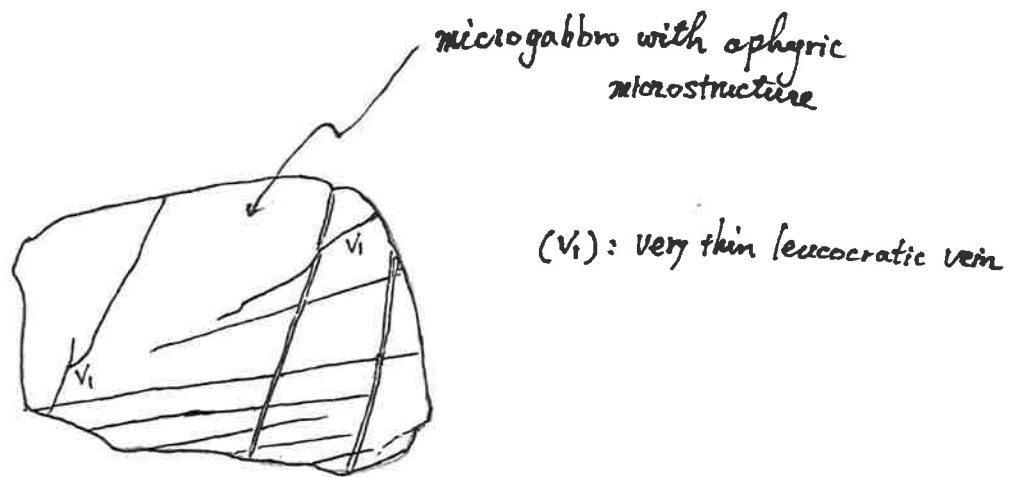
335 - U 1256 D - RUN 12 - RCJB - ROCK J

335 U1256D  
RUN12 RCJB Rock J  
151600/151800

SCRAPE



SPCM3225021



microgabbro with aphyric  
microstructure

(V<sub>i</sub>): very thin leucocratic vein

50 mm

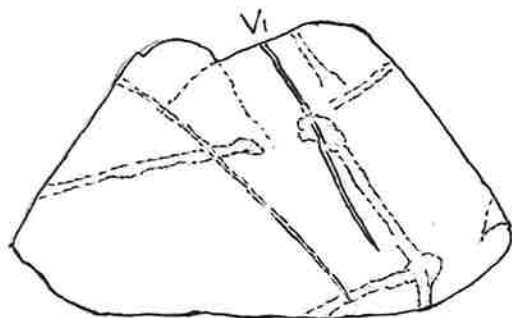
335 U1256D  
RUN12 RCJB  
ROCK K

335 U1256D  
RUN12 RCJB Rock K  
151600/151800

SCRAPE



SPCM3225031



V<sub>1</sub>: dark green planar vein

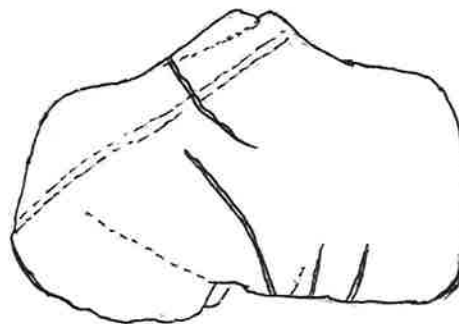
ROCK L

335 U1256D  
RUN12 RCJB Rock L  
151600/151800

SCRAPE



SPCM3225041



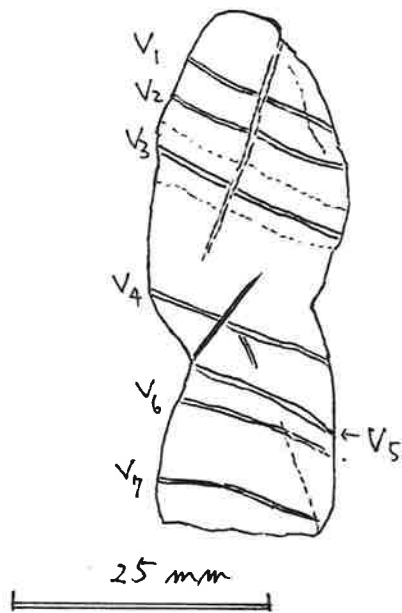
335 U1256D  
RUN12 RCJB  
Rock M

335 U1256D  
RUN12 RCJB Rock M  
151600/151800

SCRAPE



SPCM3225051



$V_1, V_2, V_4 \sim V_7$  : dark green planar vein  
 $V_3$  : dark green planar vein & alt. halo

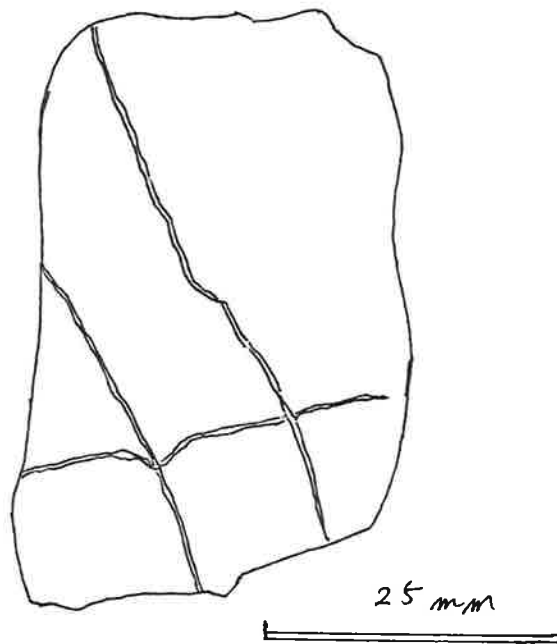
Rock N

335 U1256D  
RUN12 RCJB Rock N  
151600/151800

SCRAPE



SPCM3225061



by Daisuke Endo

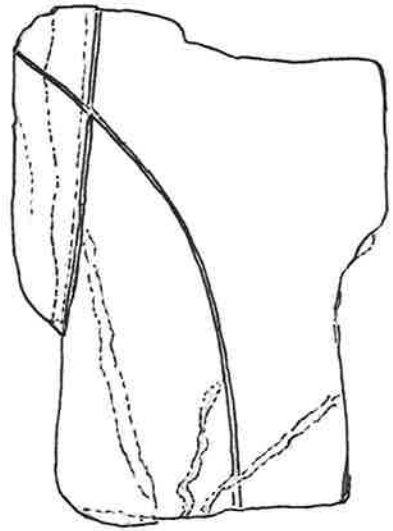
335 U1256D  
RUN12 RCJB  
ROCK O

**335 U1256D**  
**RUN12 RCJB Rock O**  
**151600/151800**

**SCRAPE**



SPCM3225071



50 mm

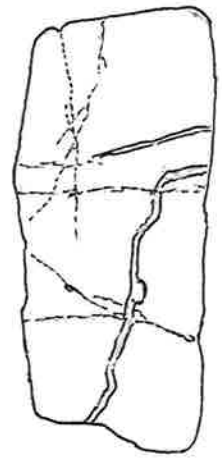
335 U1256D  
RUN12 RCJB  
ROCK P

**335 U1256D**  
**RUN12 RCJB Rock P**  
**151600/151800**

**SCRAPE**



SPCM3225081



50 mm

by Daisuke Endo

335 U1256D

RUN 12 RCJB

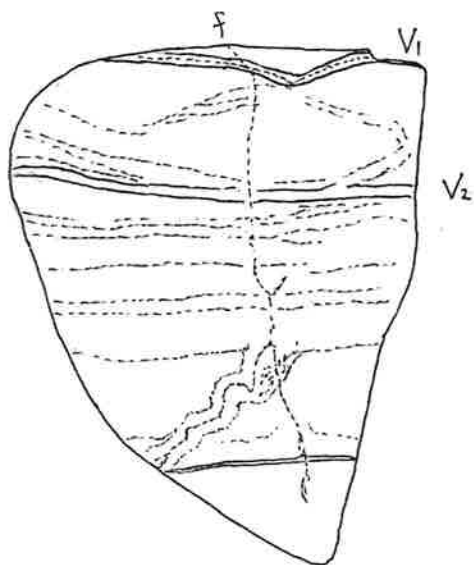
ROCK Q

335 U1256D  
RUN12 RCJB Rock Q  
151600/151800

SCRAPE



SPCM3224991



V<sub>1</sub>: dark green curved vein

V<sub>2</sub>: light gray ~ white color planar vein  
+  
brownish green alt. halo

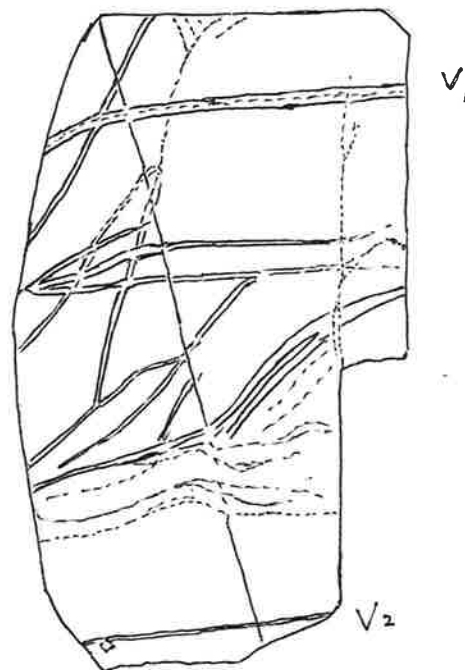
335 U1256D  
RUN12 RCJB  
ROCK R

335 U1256D  
RUN12 RCJB Rock R  
151600/151800

SCRAPE



SPCM3225091



V<sub>1</sub>: dark green planar vein

V<sub>2</sub>: dark green planar vein

by Daisuke Endo



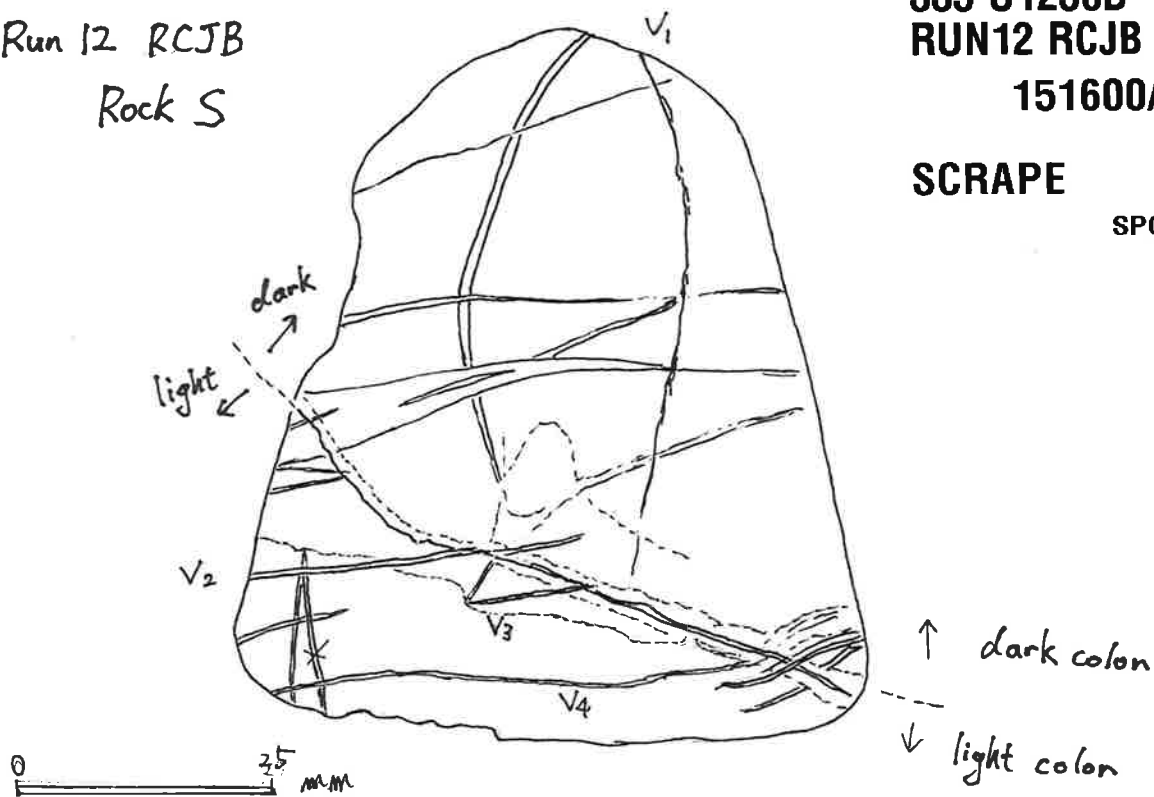
335 U1256D  
Run 12 RCJB  
Rock S

335 U1256D  
RUN12 RCJB Rock S  
151600/151800

SCRAPE



SPCM3224981



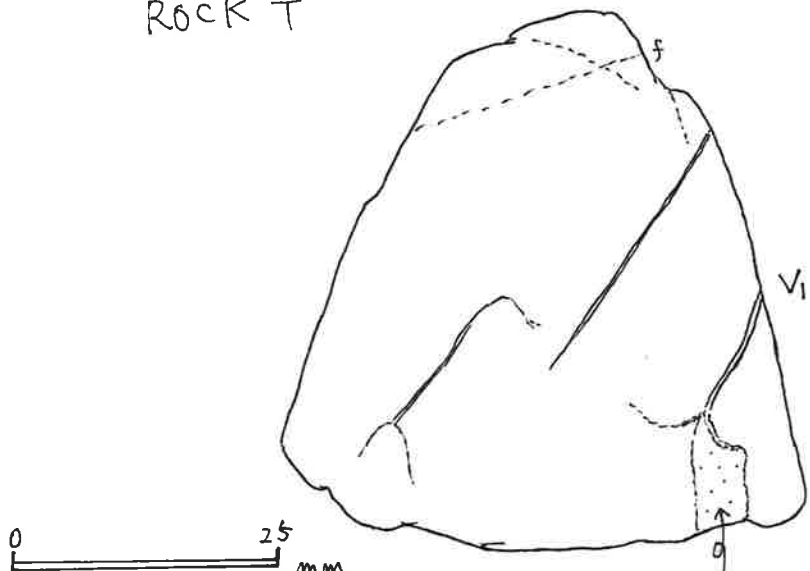
V<sub>1</sub> : white min. filling, curved vein

V<sub>2</sub> : dark green, planar vein

V<sub>3</sub> : dark green + sulfide mineral filling, diffuse vein

V<sub>4</sub> : dark green, irregular vein

335 U1256D  
Run 12 RCJB  
Rock T



dark green  
coarse grain

V<sub>i</sub>: brown + dark green color mineral filling vein

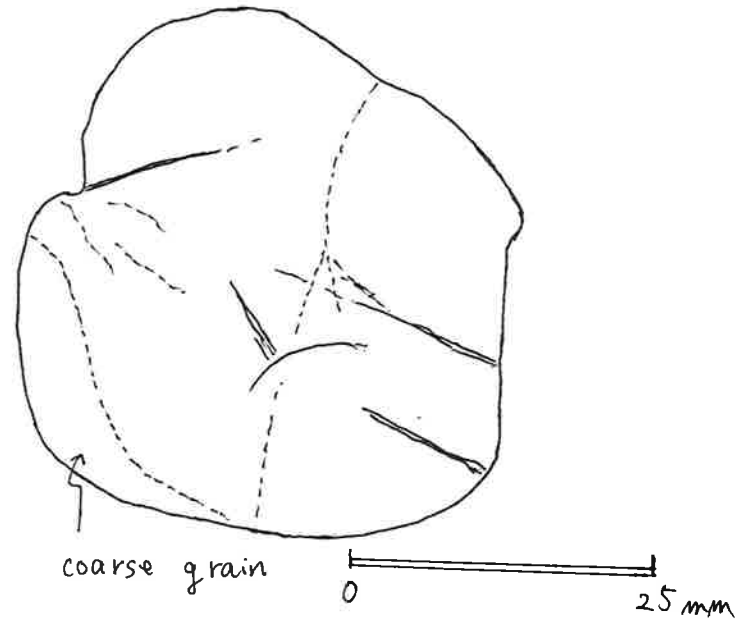
335 U1256D  
RUN12 RCJB Rock T  
151600/151800

SCRAPE



SPCM3225101

335 U1256D  
Run 12 RCJB  
Rock V



coarse grain

335 U1256D  
RUN12 RCJB Rock V  
151600/151800

SCRAPE



SPCM3225121

by Daisuke Endo

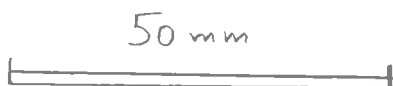
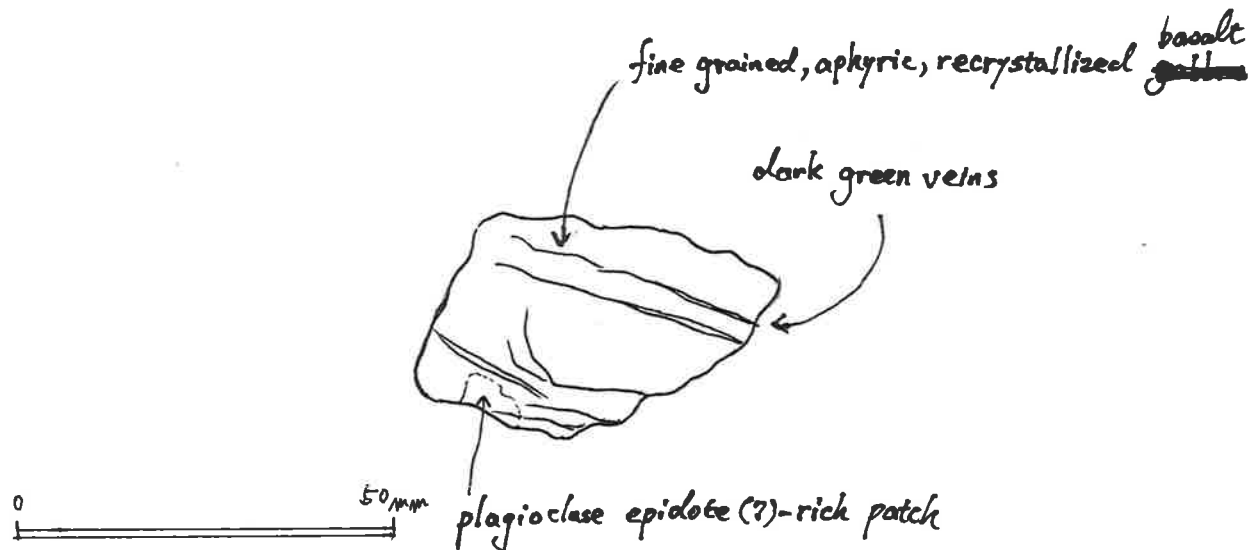
335-U-1256D - RUN12

335 U1256D  
RUN12 RCJB Rock U  
151600/151800

SCRAPE



SPCM3225111



335 - U1256D

RUN 12 - RCJB

ROCK Y

335 - U1256D

RUN 12 - RCJB

ROCK X

335 - U1256D

RUN 12 - RCJB

ROCK W

**335 U1256D**

**RUN12 RCJB Rock Y**

**151600/151800**

**SCRAPE**



SPCM3225141

**335 U1256D**

**RUN12 RCJB Rock X**

**151600/151800**

**SCRAPE**



SPCM3225131

**335 U1256D**

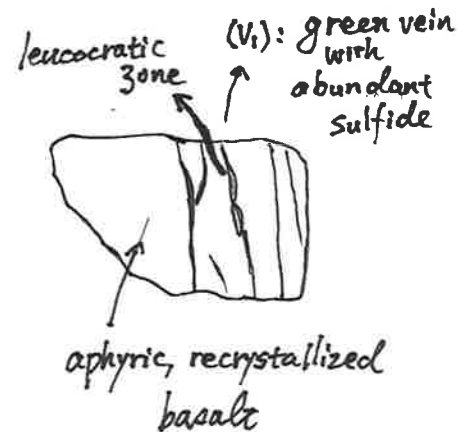
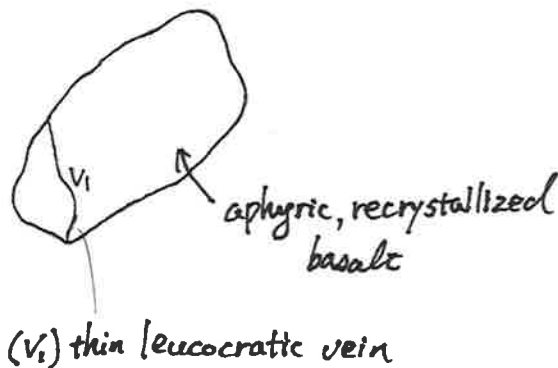
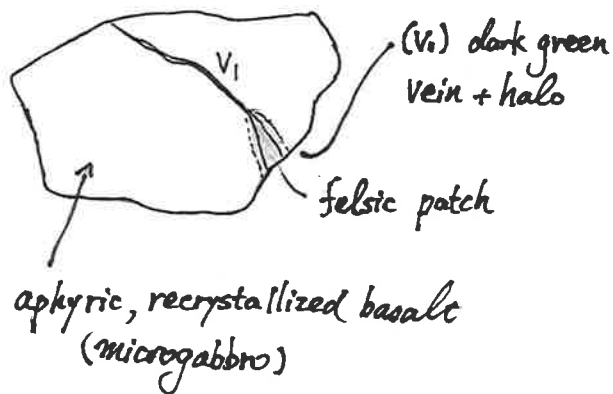
**RUN12 RCJB Rock W**

**151600/151800**

**SCRAPE**



SPCM3225161



50 mm



335 u1256D

Run 13 RCJB Rock A

335 U1256D

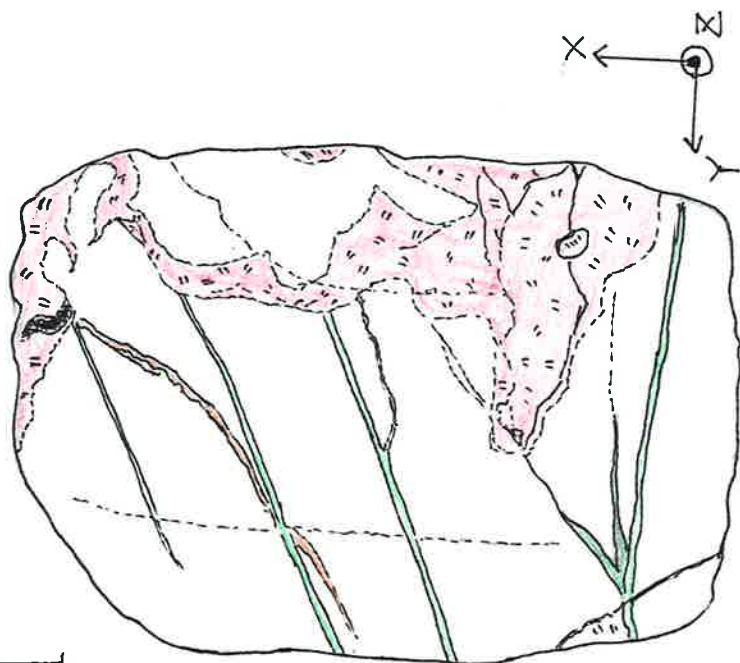
Run 13 RCJB Rock A

27000/151800

SCRAPE



SPCM3224941



Qz diorite vein (irregular)  
(350-0, 270-40)

V<sub>4</sub> (079-0, 180-85)

50 mm

V<sub>2</sub>: amphi  
(103-0, 180-65)

V<sub>1</sub>: strike: 103°  
dip azimuth: 13°  
dip angle: 70°  
(103-0, 180-66)

V<sub>3</sub>: opx?  
(107-0, 000-31)

Pyro Area

335 U1256D

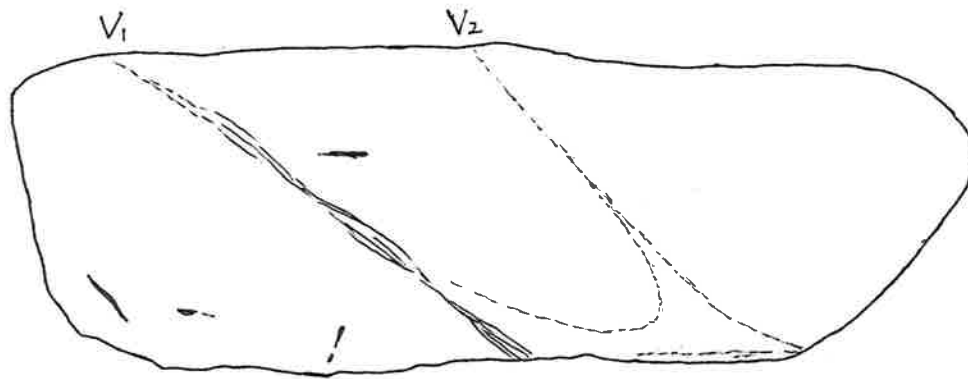
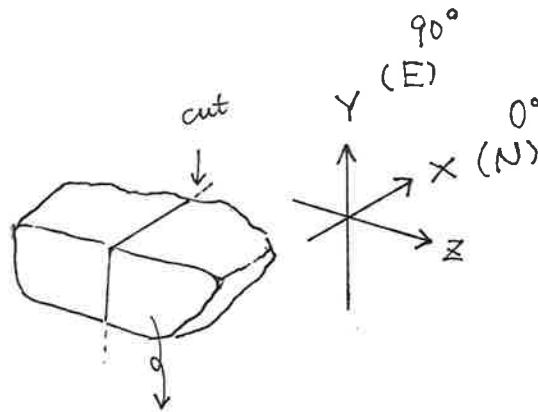
Run 13 RCJB Rock B

335 U1256D  
Run 13 RCJB Rock B  
27000/151800

SCRAPE



SPCM3224951



$V_1 : 270^\circ-52^\circ, 000^\circ-32^\circ$

$V_2 : 270^\circ-55^\circ, 180^\circ-19^\circ$

335- U 1256D - RUN 14 - FTJB - ROCK A

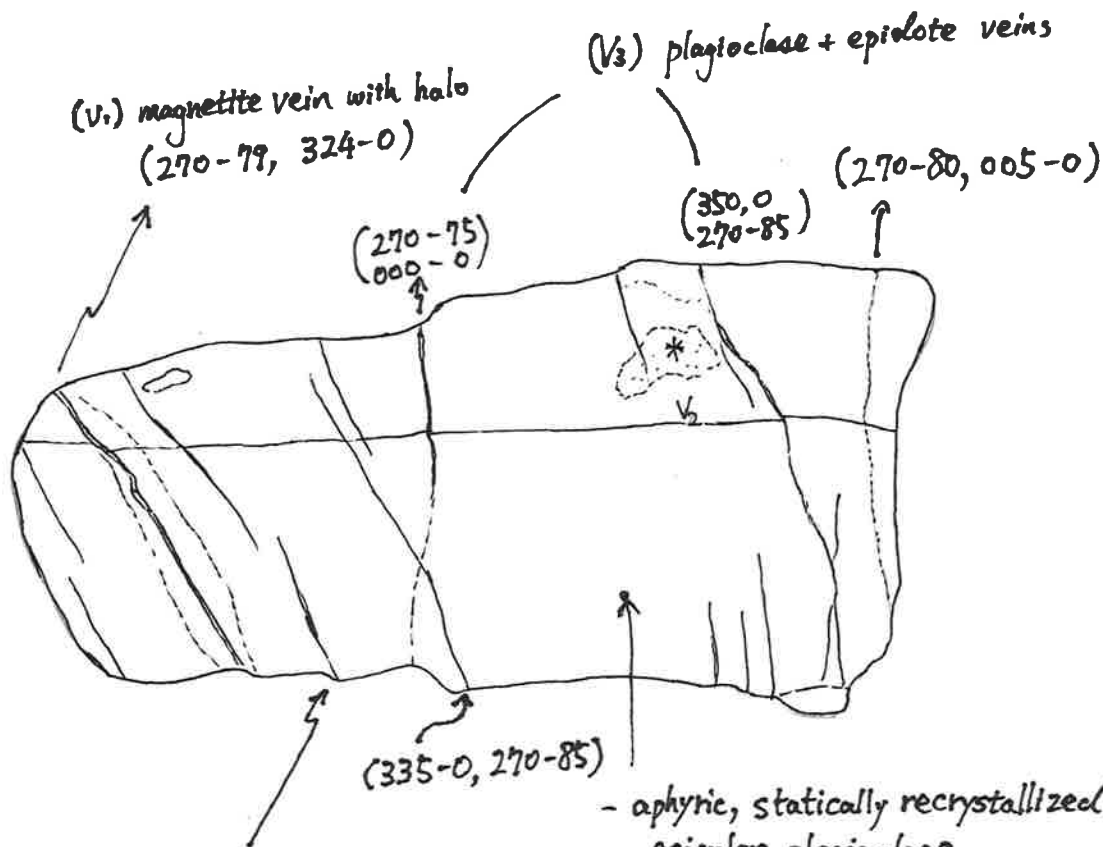
335 U1256D  
RUN14 FTJB Rock A  
151800/152000

SCRAPE



SPCM3225341

\* coarser grained domain



11 veins of type 2  
across 10cm long sample

- aphyric, statically recrystallized equant texture  
acicular plagioclase (microgabbro)  
- former grain size of protolith was medium to fine grained

50 mm



335 - U1256 D - RUN 14 - FTJB - ROCK B

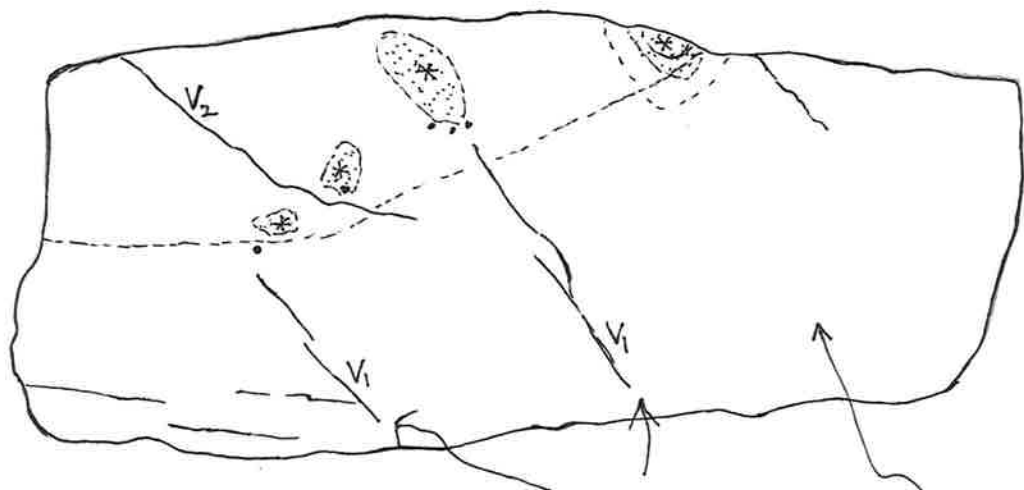
335 U1256D  
RUN14 FTJB Rock B  
151800/152000

SCRAPE



SPCM3225351

Note: On the uncut face, the coarser grained material forms  $\geq 1-2$  mm - thick veinslet with plag. + amphibole(?)



50 mm

(V<sub>1</sub>) thin plagioclase-rich whitish veins.

strike = 135°  
dip = 90°  
dip direction = 045°

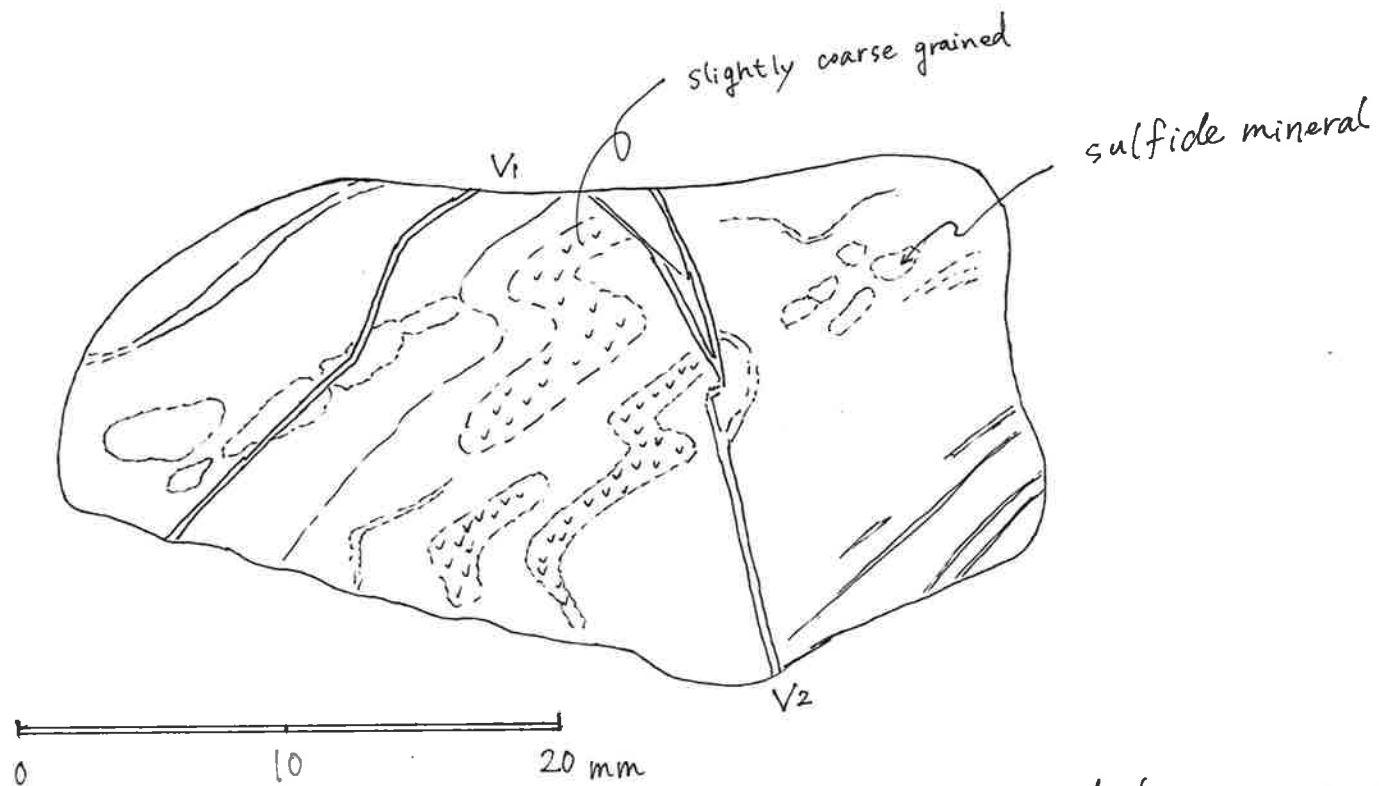
(V<sub>2</sub>): epidote + plagioclase thin veins

aphyric, fine grained microgabbro with mm-size sub rounded domains\* (xenoliths?) of coarser grained material.



335 U1256D Rnn14

EXJB Foliated TSB32



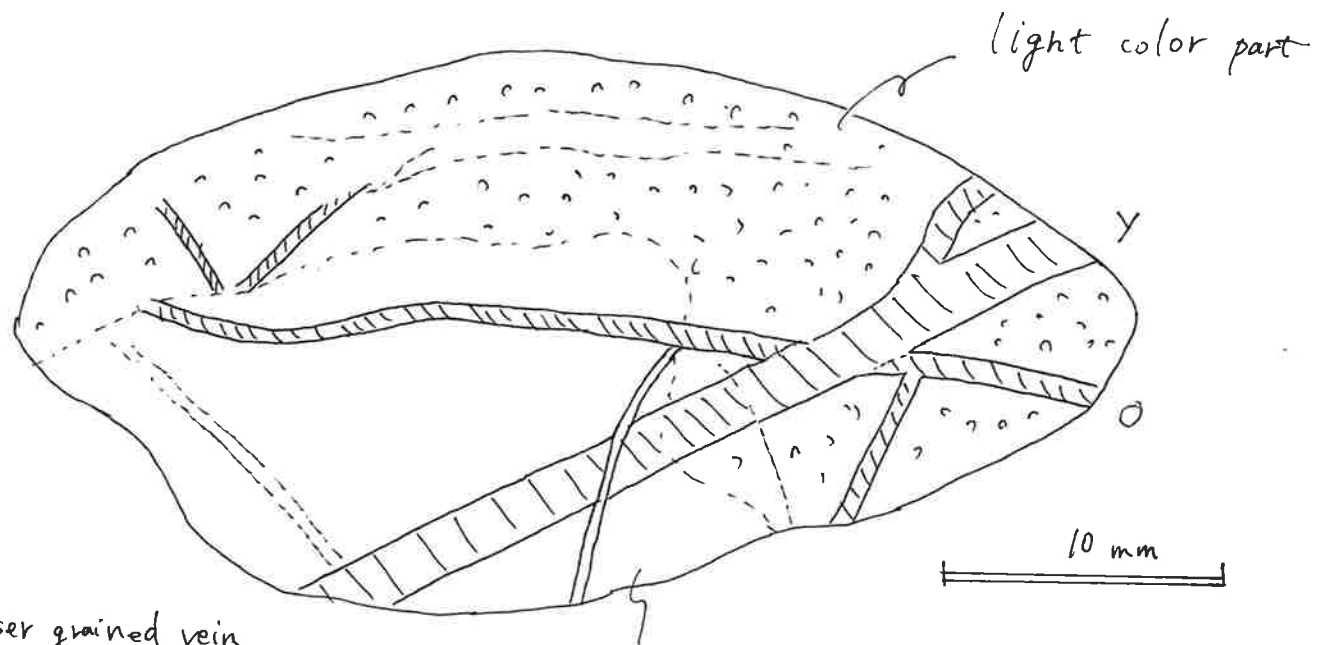
$V_1$ : dark green curved vein

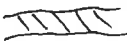

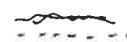

$V_2$ : dark green Y-shaped vein

by Daisuke Endo

335 U1256D

Run 15 EXJB TSB35



-  coarser grained vein
-  thin dark green vein
-  fracture
-  light grey color zone

dark color part

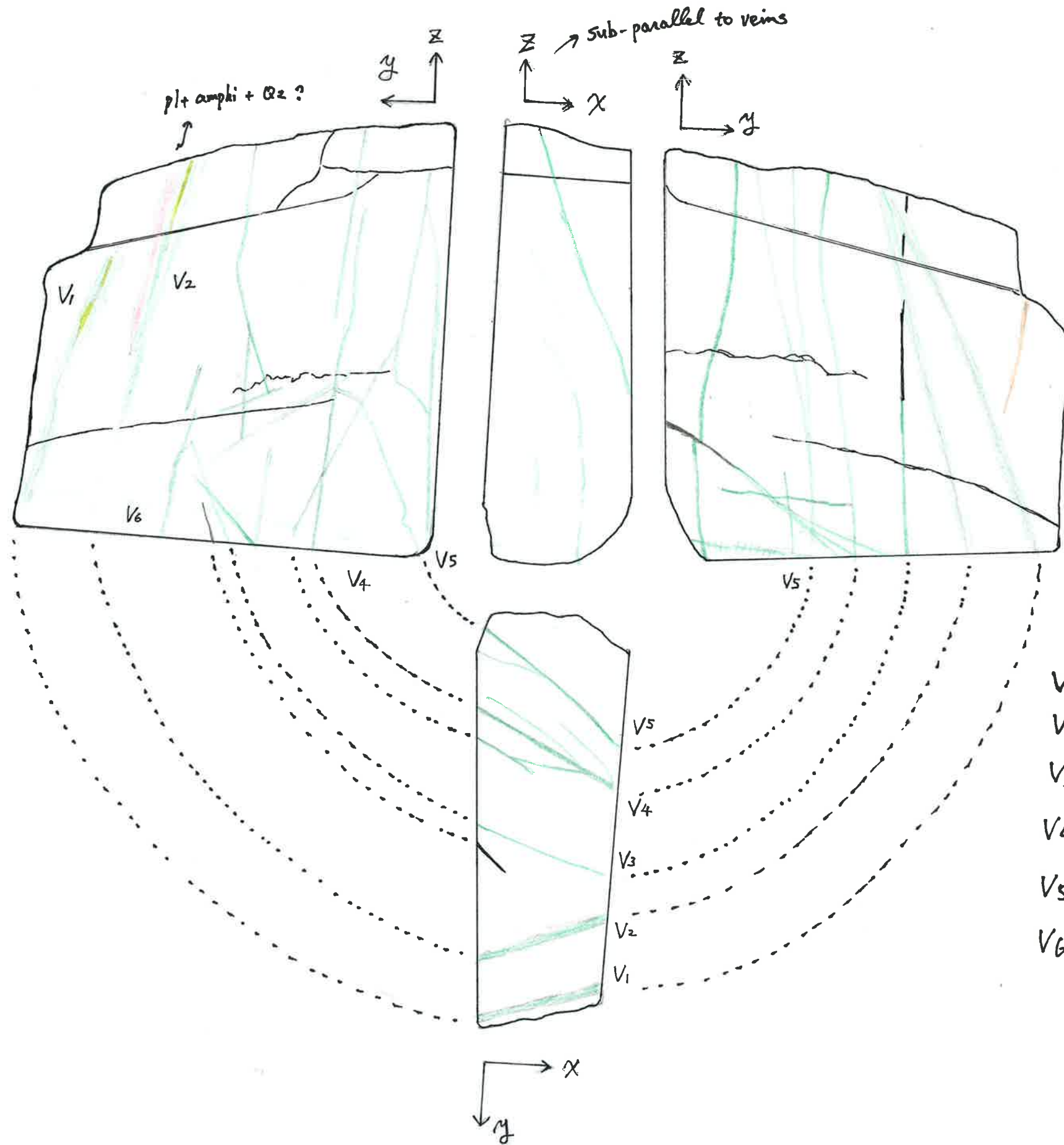
by Daisuke Endo

335 U 1256D

Run 19 RCJB

Rock A

by Ryo Anma



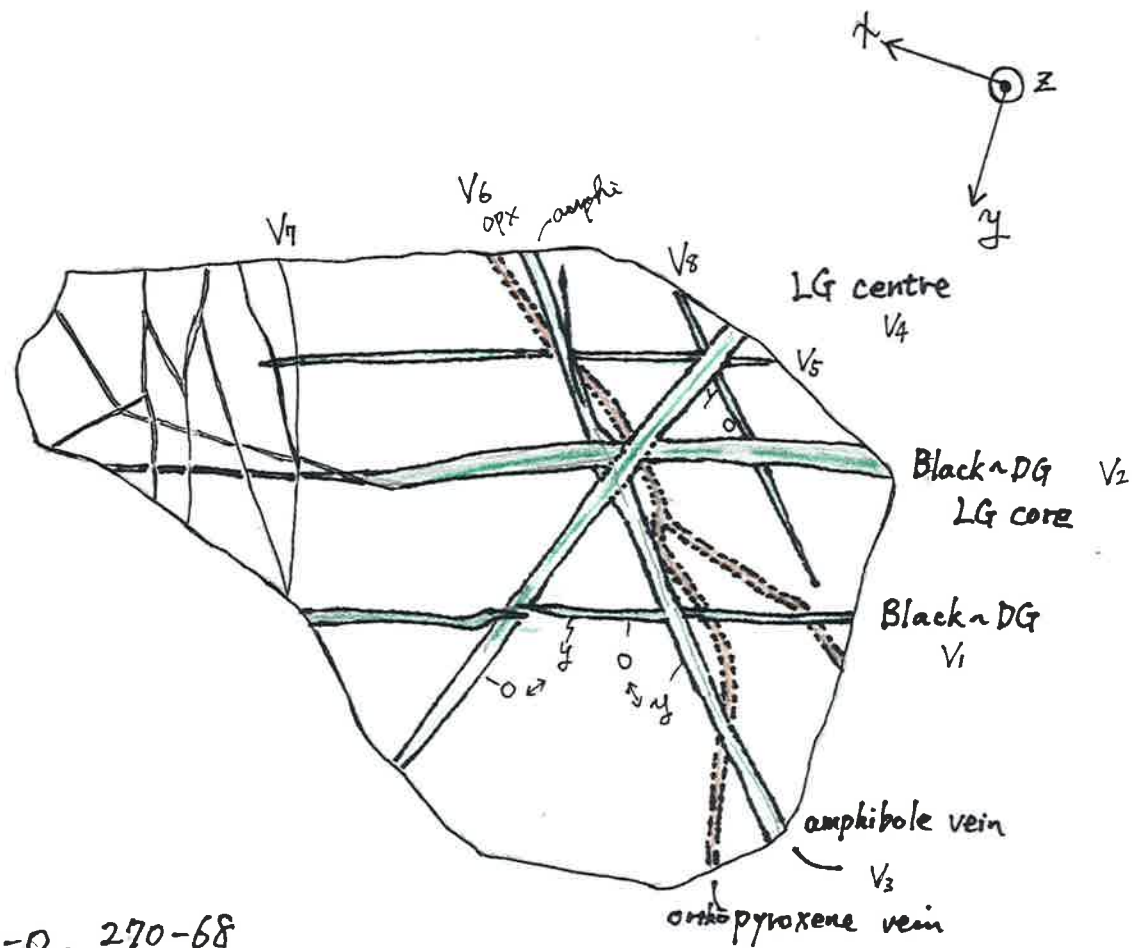
- V1 339-0, 270-76
- V2 343-0, 270-73
- V3 020-0, 270-85
- V4 031-0, 270-86
- V5 043-0, 270-83
- V6 180-0, 270-22

335 U1256D

Run 19 RCJB

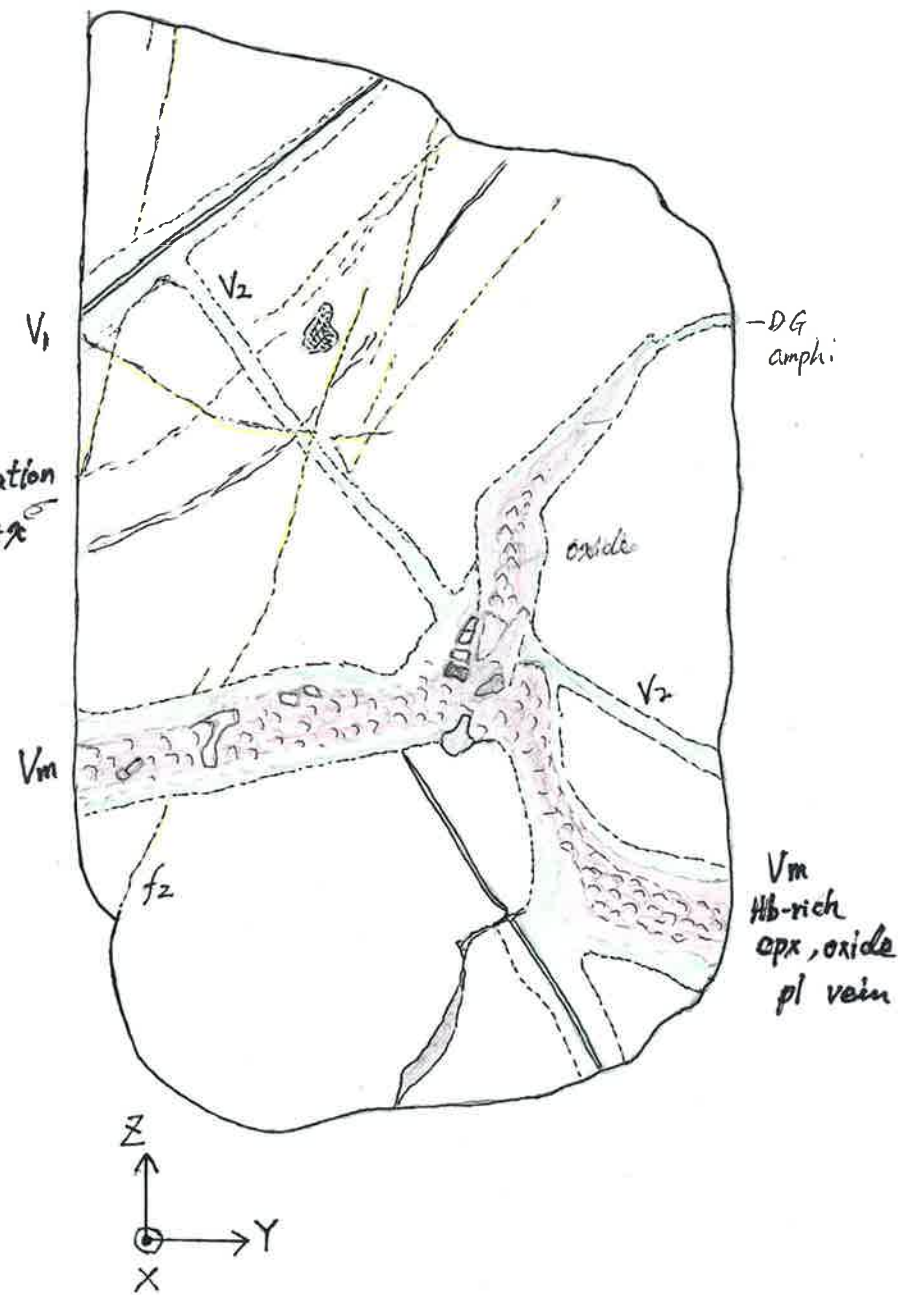
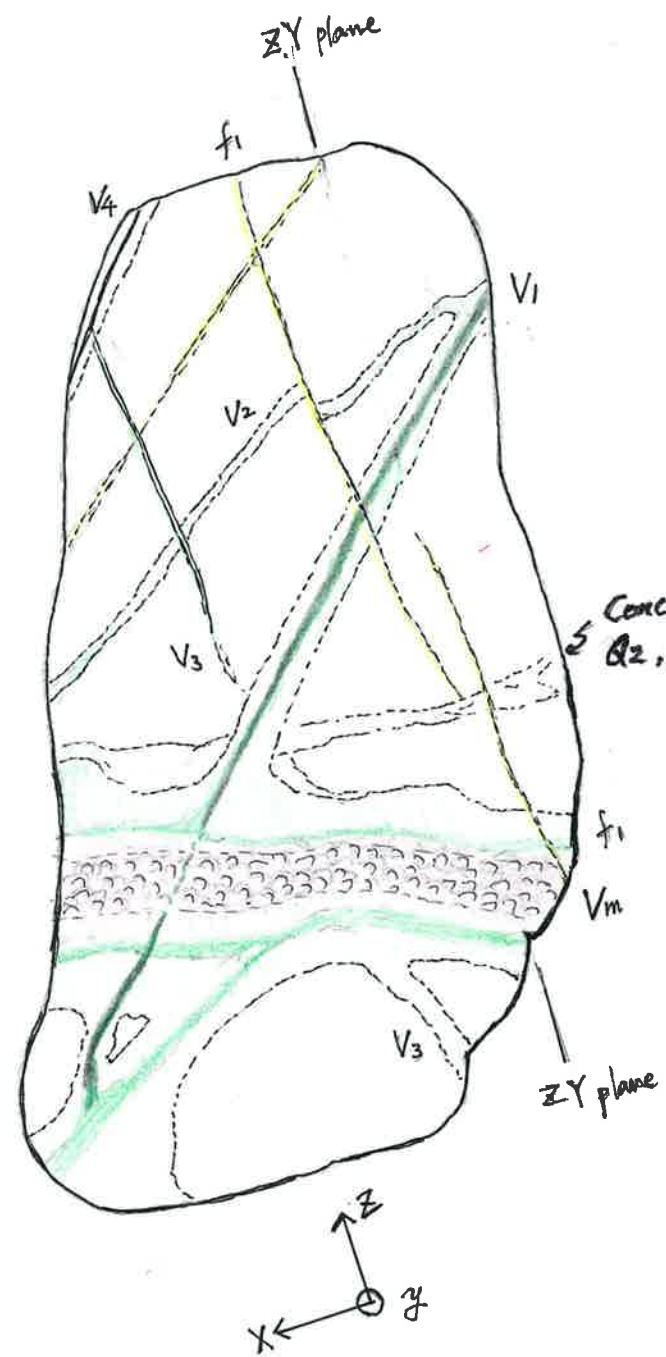
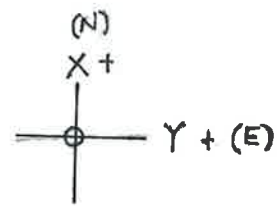
Rock B

by Ryo Anma



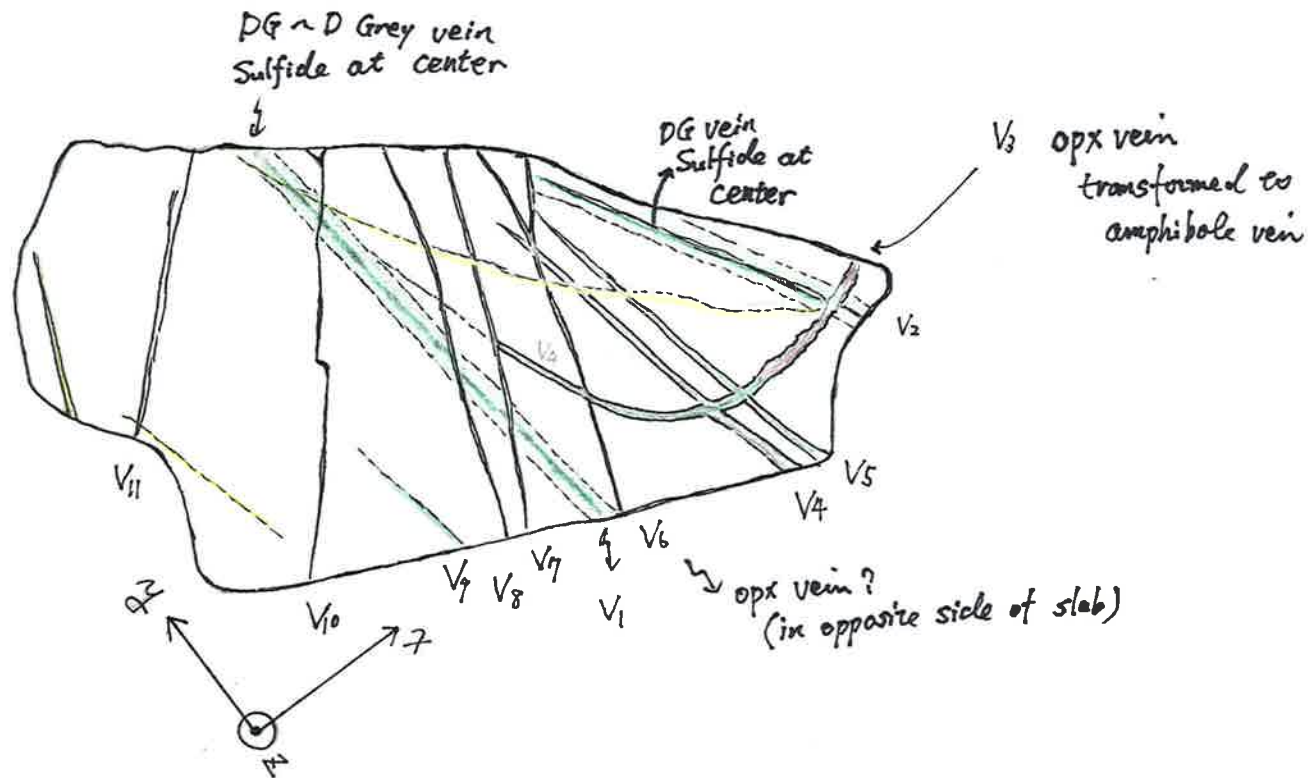
- V<sub>1</sub> 023-0, 270-68
- V<sub>2</sub> 023-0, 270-80
- V<sub>3</sub> 312-0, 270-67
- V<sub>4</sub> 071-0, 000-90
- V<sub>5</sub> 017-0, 270-85
- V<sub>6</sub> 306-0, 270-77 (304-0, 270-77)
- V<sub>7</sub> 120-0, 000-90
- V<sub>8</sub> 314-0, 270-83

335 U1256D  
 Run 19 RCJB  
 Rock C  
 by Pyo Ara



- Vm (090-19, 000-15)      V1 cuts Vm
- V1 (090-48, 180-47)      V1 cuts V2
- V2 (270-44, 180-30)
- V3 (270-28, 000-66)
- V4 (180-55, 055-0)
- f1 (000-83, ? )
- f2 (000-0, 090-72)

335 U1256D  
 Run 19 RCJB  
 Rock D



- V<sub>1</sub> 096-0, 000-88
- V<sub>2</sub> 113-0, 000-90
- V<sub>3</sub> 007-0, 270-70
- V<sub>4</sub> 104-0, 000-90
- V<sub>5</sub> 094-0, 000-90
- V<sub>6</sub> 065-0, 180-77
- V<sub>7</sub> 061-0, 180-77
- V<sub>8</sub> 066-0, 180-77
- V<sub>9</sub> 286-0, 180-80
- V<sub>10</sub> 047-0, 090-30
- V<sub>11</sub> 043-0, 090-19

Ryo An