

Lyall Offe Antarctic Field Notebooks

Please transcribe as per the general Antarctic field notebook tutorial instructions.

Lyall Offe uses a variety of abbreviations and there is variation within his notebooks. Below are listed some of the most commonly occurring abbreviations:

Alt = alteration

f = feldspar

hbde or hblde or hb = hornblende

ln = lineation

OAT = [outside air temperature]

phg = phlogopite

px = pyroxene

u/m = ultra mafic

b or biot= biotite

gnt = garnet

hy or hyp = hypersthene

melan = melanocratic

pegm = pegmatite

plg or plag = plagioclase

q or qrtz = quartz

Symbols

|| or //

L

->

x

+ - or +/- or ±

⌊

parallel

right angle to

up to (-> 2cms)

by (3m x 2m)

plus/minus

with

Please see the excellent list of minerals and place names compiled by Ross & Marie Davidson in the tutorials section for additional mineral names.

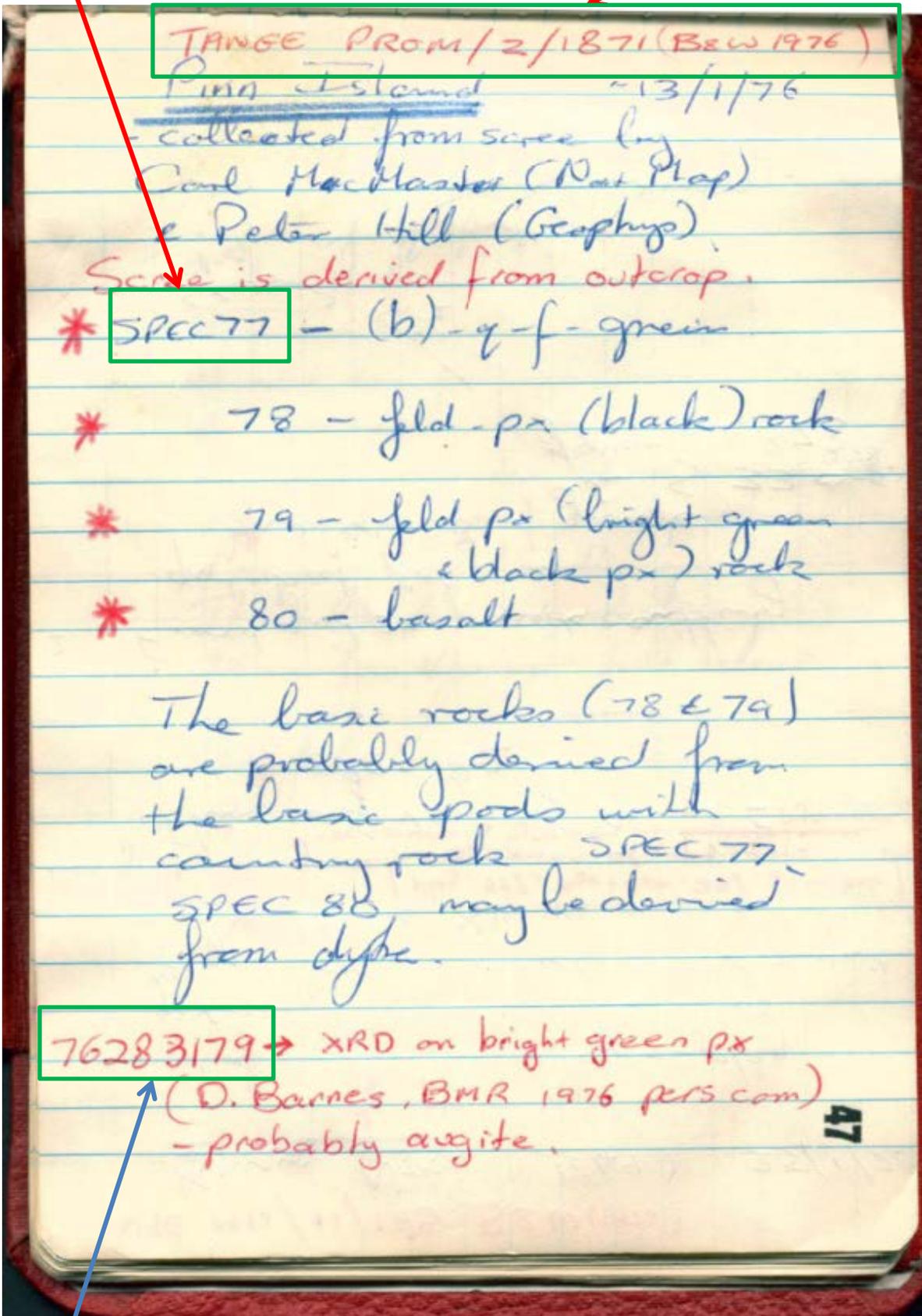
There are photograph numbers in this notebook. They are usually next to the photo. We have these recorded elsewhere, so no need to do anything special with the 'M numbers'. In later notebooks there are references to other people's photos e.g. GB/1033. Please just transcribe these in Section 1 – verbatim text.



In this notebook some of Lyall's notes to place in Section 2 include:

Air photo run number (please include location name e.g Tange Prom)

Sample Number



TANGE PROM/2/1871 (B&W 1976)

Pinn Island - 13/1/76

- collected from scree by
Carl MacMaster (Nat Map)
& Peter Hill (Geophys)

Some is derived from outcrop.

* SPEC 77 - (b) - y - f - green

* 78 - fld. px (black) rock

* 79 - fld px (bright green
& black px) rock

* 80 - basalt

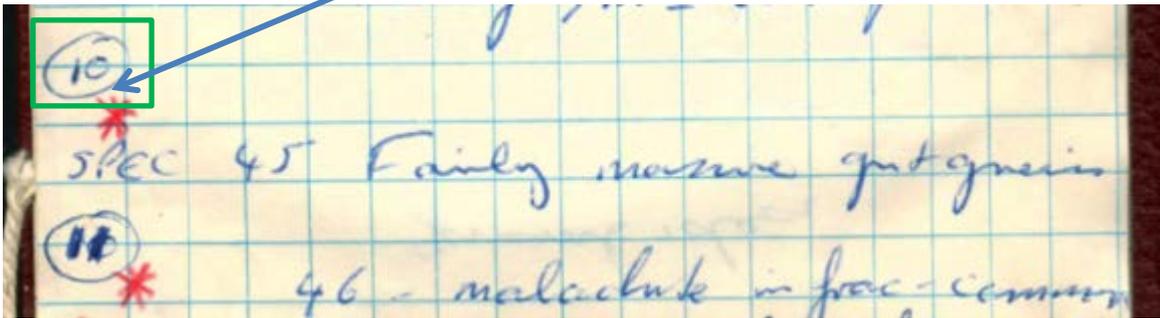
The basic rocks (78 & 79)
are probably derived from
the basic pods with
country rock. SPEC 77,
SPEC 80 may be derived
from dyke.

76283179 → XRD on bright green px
(D. Barnes, BMR 1976 pers com)
- probably augite.

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Rock Store Number

The circled number is the **Location Number**

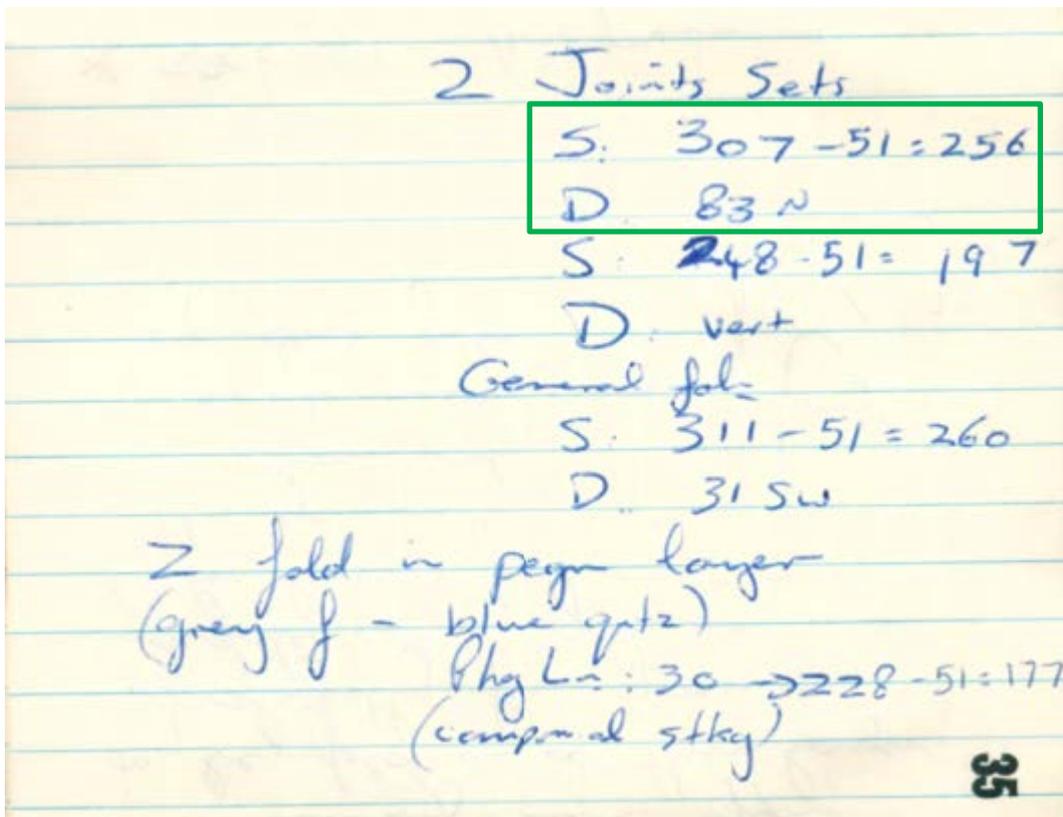


Lyll also includes recordings of the strike and dip of rock formations. Please treat the S and D as an abbreviation and expand them e.g.

S: [strike] $307 - 51 = 256$

D: [dip] 83 N [North]

You will notice that the strike number has a second number (often in the 50s) which is deleted from the first number to arrive at the final strike measurement. This is the corrected measurement which has the magnetic deviation taken into account. For more information on how these calculations are made, see this [link](#) on the Geoscience Australia website.



Blue quartz is characteristic of qtz in the Napier Complex, Enderby Land because of the high metamorphic temperature.

Sometimes the dip is recorded as vert. which is short for vertical. Please expand as e.g.

D: vert [vertical]

Foliation is another word which is regularly recorded by Offe near the recordings. Usually it is abbreviated to fol. Please expand as [foliation]

Also keep an eye out for the abbreviation st. which Offe uses for strike st. = strike

The Z fold hinge is also mentioned frequently and does not require any expansion in the transcription. The fold hinge is a linear feature and the fold hinge is the 'hinge' around which the rocks are folded. In the example on the previous page the Phg Ln = Phg [phlogopite] Ln [lineation]
See this [link](#) for more info on the geometry of folds.

If you'd like to find out more about these Chris Carson (Antarctic Geoscientist) explains what these terms are below (taken from Bob Tingey tutorial):

Foliation (see Antarctic field notebook glossary) is a planar feature in the rock, layering formed by metamorphism (heat and pressure). Geologists measure the orientation of this plane to understand the orientation of rocks over a region, and how they might be folded and faulted or otherwise 'moved' by geological forces over millions of years.

Picture a plane such as a book held at an angle. This represents a foliation or other layer in a rock. To fully describe the orientation of this plane we measure two things. The direction of a horizontal line drawn (either in reality or imagined!) on that surface. A geologist will then place a compass on that line and record the direction the line points to. Say the line points south. That is 180 clockwise from North. We record as 180°. That is termed the 'strike' of the plane or foliation.

Secondly we measure the 'dip' which is the angle the surface of the foliation or plane 'dips' from the horizontal. Say the plane dips 45° from the horizontal. We say this plane has a dip of 45°

The reading that geologists ends up with is called the strike and dip of a plane/foliation and is recorded as 180/45 (using our example). This is enough information to tell another geologist the orientation in space of the measure plane!!!

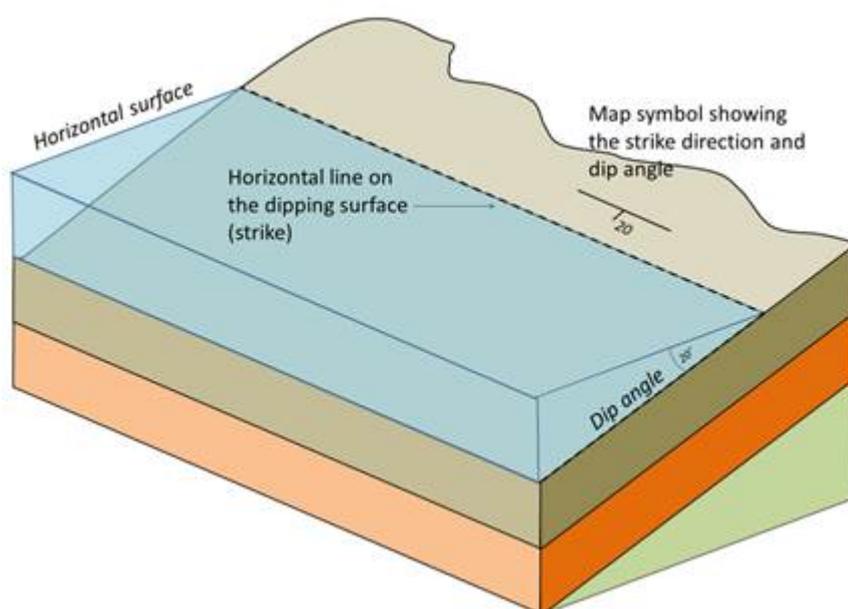


Image Source: <https://opentextbc.ca/geology/wp-content/uploads/sites/110/2015/08/strike-and-dip-of-some-tilted-sedimentary-beds.png>

Alt products are alteration products which is:

When a rock starts to weather by being at the surface, exposed to air and water, mineral start to break down to other mineral stable at the earth's surface. Geologists call this weathering or alteration and the products are called alteration products. A feldspar can alter to clay minerals for example.

Thanks again for your outstanding efforts with the Antarctic field notebooks. Your help is greatly appreciated! Jane