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# A mantle origin for Paleoarchean peridotitic diamonds from the Panda kimberlite, Slave Craton: Evidence from <sup>13</sup>C-, <sup>15</sup>N- and <sup>33,34</sup>S-stable isotope systematics

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#### ABSTRACT

In order to address diamond formation and origin in the lithospheric mantle underlying the Central Slave Craton, we report N- and C-stable isotopic compositions and N-contents and aggregation states for 85 diamonds of known paragenesis (73 peridotitic, 8 eclogitic and 4 from lower mantle) from the Panda kimberlite (Ekati Mine, Lac de Gras Area, Canada). For 12 peridotitic and two eclogitic sulfide inclusion-bearing diamonds from this sample set, we also report multiple-sulfur isotope ratios.

The 73 peridotitic diamonds have a mean  $\delta^{13}$ C-value of -5.2% and range from -6.9 to -3.0%, with one extreme value at -14.1%. The associated  $\delta^{15}$ N-values range from -17.0 to +8.5% with a mean value of -4.0%. N-contents range from 0 to 1280 ppm. The 8 eclogitic diamonds have  $\delta^{13}$ C-values ranging from -11.2 to -4.4% with one extreme value at -19.4%. Their  $\delta^{15}$ N ranges from -2.1 to +7.9% and N-contents fall between 0 and 3452 ppm. Four diamonds with an inferred lower mantle origin are all Type II (i.e. nitrogenfree) and have a narrow range of  $\delta^{13}$ C values, between -4.5 and -3.5%. The  $\delta^{34}$ S of the 14 analyzed peridotitic and eclogitic sulfide inclusions ranges from -3.5 to +5.7%. None of them provide evidence for anomalous  $\delta^{33}$ S-values; observed variations in  $\delta^{33}$ S are from +0.19 to -0.33%, i.e. within the 2 sigma uncertainties of mantle sulfur ( $\delta^{33}$ S = 0\%).

At Panda, the N contents and the  $\delta^{13}$ C of sulfide-bearing peridotitic diamonds show narrower ranges than silicate-bearing peridotitic diamonds. This evidence supports the earlier suggestion established from eclogitic diamonds from the Kaapvaal that sulfide-(±silicate) bearing diamonds sample a more restricted portion of sublithospheric mantle than silicate-(no sulfide) bearing diamonds. Our findings at Panda suggest that sulfide-bearing diamonds should be considered as a specific diamond population on a global-scale. Based on our study of  $\delta^{34}$ S,  $\Delta^{33}$ S,  $\delta^{15}$ N and  $\delta^{13}$ C, we find no evidence for subduction-related isotopic signatures in the mantle sampled by Panda diamonds.

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### 1. Introduction

Within the last 30 years, using evidence from the study of deepseated xenoliths and diamonds from southern African kimberlites, numerous models have been proposed to describe the formation and origin of the continental cratonic lithosphere (e.g. Boyd and Gurney, 1986; Haggerty, 1986; Pearson and Wittig, 2008). The discovery and mining of diamondiferous kimberlites on the Northern (Jericho), Central (Ekati, DO-27, Diavik) and southern Slave Craton (Snap Lake) provides new opportunities to test and refine these models.

\* Corresponding author. E-mail address: cartigny@ipgp.jussieu.fr (P. Cartigny). In the last few years, several first order distinctions between the subcratonic lithospheric mantle beneath the Slave and Kaapvaal Cratons have been made. Diamonds from the Slave are less resorbed than their South African counterparts (Stachel et al., 2003; Gurney et al., 2004) and, in this respect, are more similar to Siberian diamonds. Diamonds from the Slave also include a higher proportion of coated stones (commonly referred to as *fibrous* diamonds although this represents a simplification since some coats can actually be well-crystallised and non-fibrous diamond, c.f. Moore, 1985). Eclogite xenoliths from the Slave (Jericho and Diavik) have been dated to ~2.1 Ga (Paleoproterozoic) (Schmidberger et al., 2005, 2007) and thus are generally younger than eclogite xenoliths from the Kaapvaal (and Yakutia) which are principally Archean in age (see Pearson et al., 1995a,b). In contrast, the formation of peridotitic lithospheric mantle components in the Central Slave extends



<sup>0024-4937/\$ –</sup> see front matter 0 2009 Elsevier B.V. All rights reserved. doi:10.1016/j.lithos.2009.06.007

 

 Table 1
  $\delta^{13}$ C,  $\delta^{15}$ N, N contents (determined by infrared spectroscopy and/or bulk combustion) and percentage of the nitrogen B species, averaged  $\delta^{34}$ S and  $\Delta^{33}$ S of sulfides in diamonds from

 Panda.

$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Sample paragenesis			Weight	$\delta^{13}C$	$\delta^{15}N$	-	+	N <sub>COMB</sub>	N <sub>COMB</sub>	N <sub>FTIR</sub>	В	$\delta^{34}S$	$\Delta^{33} S$
PARD         P         II         23.437         -1.52         1.00         0.06         0.61         0.51         0.56         0.66         0.61         0.57         0.11           RRL         P         II         1.7522         -0.55         0.5         R26         P         0         0           RRL         P         II         1.7522         -0.55         0.5         R26         0         0           RRL         P         II         2.237         -0.5         0.5         7.44         6.50         9         0         0           W08         P         H         0.60         7.44         6.50         9         0         9         0         9         0         9         0         9         0         9         0         9         0         9         0         9         0         9         0         0         0         1.5         0         0         0         1.5         0         0         0         1.5         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         <				(mg)	(‰)	(‰)			(ppm)	(at.ppm)	(at.ppm)	(%)	(‰)	(‰)
PAR2         p         I         I         I         I         I         I         I           PAR3         p         H         I </th <th>PA01</th> <th>р</th> <th>Н</th> <th>2.3437</th> <th>- 5.58</th> <th>0.9</th> <th>-0.6</th> <th>0.6</th> <th>451</th> <th>387</th> <th>348</th> <th>22</th> <th></th> <th></th>	PA01	р	Н	2.3437	- 5.58	0.9	-0.6	0.6	451	387	348	22		
PAB3         P         II         I.TAT2         -4.53	PA02	p	Н	3.0041	-5.22	1.2	-0.5	0.5	826	708	372	11		
PANA         P         H         1.7672	PA03	р	Н	1.7632	-4.58						0			
P       H       2.2344       -5.81       5.7       -0.6       0.8       267       2.9       2.25       13         PM00       P       H       0.0741       -5.31       -5.7       -0.6       0.8       0.7       0.7         PM00       P       H       0.0741       -5.32       -0.1       0.5       500       471       345       800         PM10       P       H       1.0259       -5.53       -1.0       0.0       500       471       345       800         PM11       P       H       1.0259       -6.83       -1.2       -0.3       0.0       50       491       40       40       40         PM14       P       H       0.3258       -1.40       0.5       401       56       82       131       61         PM14       P       H       0.3258       -5.40       -1.54       -0.4       0.3       233       277       138       62         PM17       P       H       0.3268       -5.50       -1.54       -1.4       0.3       233       277       138       62         PM21       P       H       0.0368       -3.56       77	PA04	р	Н	1.7632	-4.58						0			
PMO6         p         H         0.2397         -5.51	PA05	р	Н	2.2344	-5.81	5.7	-0.6	0.8	267	229	225	19		
PAN7         P         H         0.7387         -5.21         -5.23         -6.4         0.5         7.44         0.8         0         1           NH1         p         H         0.2387         -5.32         -14         0.60         0.5         7.44         0.88         0.9         7.45         36           NH1         p         H         1.3088         -5.35         -12         -0.4         0.5         5.0         4.31         5.6         4.1           NH1         p         H         2.3288         -1.05         -0.4         0.4         4.66         8.2         2.131         6.1           NH5         p         H         0.3238         -1.05         -2.4         -0.1         6.6         8.2         2.131         6.1           NH5         p         H         0.4545         -4.55         -0.7         1.0	PA06	р	Н	2.3977	- 5.51						26	3		
NAMB         P         H         20:341	PA07	р	Н	0.7387	- 5.21						67	47		
PAR8         p         H         1.278.3        4.3         -0.5         0.3         7.44         6.78         6.71         85           Phil         P         L         1.185        5.65         -1.08         0.20         155         95         94         155         94           Phil         P         L         2.786         -5.57         -1.2         -0.8         0.9         50         43         56         40           Phil         P         L         2.258         -1.63         -1.5         -0.6         0.5         64         42         765         44           P         H         0.322.2         -5.00         -5.5         -2.4         0.1         56         62         17           P         H         0.432.3         -5.71         -3.4         -0.7         10         127         178         62           P         H         1.418         -4.53         2.2         -1.0         0.4         313         157         12         -0.8         0.3         171         18         62           P         H         1.2788         -5.30         -0.12         -0.10         0.4         313 <td>PA08</td> <td>р</td> <td>Н</td> <td>0.6741</td> <td>- 5.19</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td>	PA08	р	Н	0.6741	- 5.19						0			
Ph/P         p         H         13029	PA09	р	Н	2.7824	- 5.28	-4.1	-0.6	0.5	744	638	631	89		
PAIL         p         L         0.37.4         -0.32         -0.03         -1.0         0.5         50         41         49         H           013         p         H         1.2350         -0.03         -0.5         0.5         64         40           0141         p         H         1.2350         -0.6         0.5         648         407         206         41           015         p         H         0.9322         -5.00         -15.8         -2.4         0.1         96         82         131         61           017         P         H         1.6533         -5.5         -         07         0         0         0.6         71         0.7         0         73         13         62         73         73         73         73         73         73         74 <td< td=""><td>PA10</td><td>р</td><td>H</td><td>1.3059</td><td>- 5.65</td><td>1.2</td><td>-0.8</td><td>0.9</td><td>116</td><td>99</td><td>125</td><td>56</td><td></td><td></td></td<>	PA10	р	H	1.3059	- 5.65	1.2	-0.8	0.9	116	99	125	56		
PAILS         P         II         JUM         P         II         P	PA11	р	L	0.5774	- 5.32	-10.8	-1.0	0.5	550	4/1	345	80		
Phil         Phil         LOSD         LD         <	PA12	р	Н	1.1805	- 5.05	10	0.0	0.0	50	42	12	40		
PARS         P         I         0.23         2.88         8.27         2.08         4.17           NH6         P         1         0.33         2.40         1         96         52         13         61           NH7         P         H         0.453         25.6         -1.5.8         -1.6         0.1         96         52         13         61           NH7         P         H         0.458         -5.0         -1.5.4         -1.4         0.3         2.33         2.77         18         62           N22         P         H         1.411         -4.27         -1.0         0.4         183         157         192         79         79           N22         P         H         1.414         -4.27         -1.70         -0.10         0.4         183         157         192         79         79         74         6         79         74         6         79         74         6         79         74         6         79         74         74         74         74         74         74         74         74         74         74         74         74         74         74         74 <td>PAI3</td> <td>р</td> <td>H</td> <td>2.7696</td> <td>- 5.07</td> <td>1.2</td> <td>-0.8</td> <td>0.9</td> <td>50</td> <td>43</td> <td>56</td> <td>40</td> <td></td> <td></td>	PAI3	р	H	2.7696	- 5.07	1.2	-0.8	0.9	50	43	56	40		
PARS         P         H         1333         -1430         -24         0.1         96         52         10         61           PAIS         P         H         0.4034        490         P         106         71           PAIS         P         H         0.788        501         -15.4         -14         0.3         253         217         178         62           PAIS         P         H         1.578        50        05         0.4         183         157         192         79           PA23         P         H         4.441        427         -17.0         -1.0         0.4         183         157         192         79           PA23         P         H         4.441        427        10         0.4         483         157         192         79           PA24         P         3.215        338        05         0.5         577         495         464         7           PA35         P         1.238        514        15        05         6.5         229         220         227         8           PA30         P         1.2380	PA 14	р	н	2.9360	- 6.93	- 1.5	-0.6	0.5	498	427	296	41		
nny p n n 0.2242 - 0.04 -0.04 -0.0 -0.0 -0.0 -0.0 -0.0 -	PAID DA16	р	н	1.5258	- 14.05	15.0	2.4	0.1	06	07	121	61		
P         P         P         Description         P         Description         P           PN30         p         H         L0094        2.70         3.4         -0.7         1.0         277         1.8         6.2           PN20         p         H         0.768         -5.0         -0.9         -1.0         0.4         1.83         1.57         1.92         79           PN23         p         H         1.441         -4.22         -1.70         -1.0         0.4         1.83         1.57         1.92         79           PN24         p         1.3215         -4.22         -0.5         0.5         5.77         4.65         4.64         7           PN25         p         1.7332         -5.14         -5.1         -0.8         0.6         2.47         2.10         2.89         1.1         0         1.238         -7.5         -0.9         7.7         1.6         0         7.7         1.6         0         7.7         1.6         0         1.0         0         1.0         0         1.0         1.0         1.0         0         1.0         1.0         0         1.0         0         1.0         0 <td< td=""><td>PAID</td><td>р</td><td>н</td><td>0.9322</td><td>- 5.00</td><td>- 15.8</td><td>-2.4</td><td>0.1</td><td>96</td><td>82</td><td>131</td><td>01</td><td></td><td></td></td<>	PAID	р	н	0.9322	- 5.00	- 15.8	-2.4	0.1	96	82	131	01		
nna p p H 00000 - 2-27 14 - 07 10 17 10 9 165 17 W20 p H 0788 - 50 - 154 - 14 03 253 217 18 62 W21 p H 15788 - 550 - 0.9 - 10 0.4 183 157 132 79 W23 p L 32671 - 455 2.4 - 0.5 0.5 680 583 543 57 W24 p 33732 - 5.73 - 6.4 - 0.5 0.5 467 400 544 85 W25 p 37332 - 5.73 - 6.4 - 0.6 0.5 467 400 544 85 W26 p 12280 - 5.14 - 5.1 - 0.8 0.6 245 210 29 11 W27 p 17429 - 433 W28 p 10011 - 5.32 - 10.8 - 0.9 0.5 267 229 222 0 W28 p 10011 - 5.32 - 10.8 - 0.9 0.5 267 229 222 0 W28 p 10011 - 5.32 - 10.8 - 0.9 0.5 267 229 222 0 W28 p 10011 - 5.32 - 10.8 - 0.9 0.5 267 229 222 0 W28 p 10011 - 5.32 - 10.8 - 0.9 0.5 267 229 222 0 W28 p 10081 - 2.380.7 0.6 375 223 29 22 0 W28 p 100911 - 5.32 - 10.8 - 0.9 0.5 267 229 222 0 W28 p 100911 - 5.32 - 10.8 - 0.9 0.5 267 229 282 0 W28 p 10091 - 2.38 - 0.7 0.6 375 223 29 22 0 W28 p 10091 - 2.38 - 0.7 0.6 255 134 14 0 W28 p 0.9444 - 5.31 - 7.7 - 0.0 0.6 256 194 271 13 W83 p 0.9444 - 5.31 - 7.7 - 0.8 0.6 155 133 184 14 W35 p 0.2847 - 4.73 - 0.2 - 0.6 0.6 1280 1097 609 8 W37 p 2.007 - 5.6 3.0 - 0.6 0.7 135 116 79 45 W38 p 1.1500 - 4.34 0.2 - 0.6 0.6 1220 1097 609 8 W37 p 2.007 - 5.56 3.0 - 0.5 0.23 191 57 6 W40 p L 2.2249 - 5.37 - 1.0 0.6 225 194 331 817 W44 p H 3.003 - 4.34 0.2 - 0.6 0.6 1220 1097 609 8 W47 p 2.0256 - 4.47 8.5 - 0.5 11 87 75 - 0 W44 p H 3.003 - 5.12 - 4.0 - 0.7 0.6 223 191 55 62 W44 p H 3.003 - 5.12 - 4.0 - 0.7 0.6 223 191 55 62 W44 p H 3.003 - 5.12 - 4.0 - 0.7 0.6 223 191 55 62 W44 p H 3.003 - 5.12 - 1.0 93 80 494 85 W44 p H 1.0533 - 5.45 - 1.8 - 1.2 10 93 80 494 85 W44 p 1.1533 - 5.45 - 1.8 - 1.2 10 93 80 494 85 W44 p 1.1533 - 5.45 - 1.8 - 1.2 10 93 80 494 85 W45 p 2.2586 - 4.47 85 - 0.5 11 87 75 - 0 W46 p 2.470 - 5.71 3.3 - 0.6 0.6 495 433 13 27 40 W47 p 1.1533 - 4.01 - 0.6 0.6 495 439 434 22 W48 p 1.15928 - 5.03 1.3 - 0.6 0.6 495 439 434 22 W49 p 0.1633 - 5.45 - 1.8 - 1.2 10 93 80 494 85 W44 p 1.1653 - 5.46 - 1.8 - 1.2 0 9 W45 p 1 1.2584 - 4.42 - 0 W46 p 1 1.3878 - 6.01 - 0.7 0.6 322 75 38 74 - 0 W46 p 2.2825 - 5.77 1.3 - 0.5 0.5 322	PA17	р	п	1.3435	- 5.45						1/	71		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	PA 10	p	п	1,0000	- 4.99	2.4	0.7	10	107	100	65	/1		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	PA19 PA20	p	L H	0.7688	- 5.71	- 15 <i>A</i>	-0.7	1.0	253	217	118	47 62		
PN23         P         I. 4.141         -4.27         -1.70         -0.4         183         157         192         79           PN24         p         1.2.5657         -4.57         -0.5         0.5         577         495         464         77           PN24         p         1.2.280         -5.14         -5.1         -0.6         0.5         477         400         544         79           PN24         p         1.7.289         -4.33         -75         -1.2         0.6         90         77         174         6           PN29         0         9011         -5.32         -10.8         -0.9         0.5         277         229         22         0           PN30         p         1.1268         -75         -1.2         0.6         90         77         174         6           PN31         p         1.1505         -4.87         -2.5         -0.6         0.7         248         195         237         8           PN31         p         0.3944         -5.31         -7.7         -0.0         0.6         228         133         844         14         14         14         14         14	DA21	P	н	1 5788	- 5 50	- 13.4	- 1.4	0.5	255	78	73	51		
n 23 p 1 32367 - 4.85	DA22	P	н	1,5788	- 4.27	- 17.0	- 1.0	0.5	183	157	102	70		
PAC3         P         3.2115         -3.58         L.A.         -0.5         0.5         577         406         464         7           PAC3         p         -3.332         -5.34         -0.6         0.5         447         400         544         85           PAC8         p         -1.2280         -5.14         -0.6         0.6         245         210         259         11           PA28         p         1.7695         -4.08         -75         -1.2         0.6         90         77         774         6           PA29         p         0.9011         -5.32         -10.8         0.6         225         29         0.2         0           PA30         p         1.2550         -4.47         -6.3         -0.7         0.6         375         321         78         9           PA31         p         0.9944         -5.31         -77         -10         0.6         226         194         271         13         144         14           PA33         p         1.1300         -4.47         -0.2         0.6         153         184         14           PA34         p         1.3033	PA23	P D	I	3 2667	-4.85	24	-0.5	0.4	680	583	543	57		
PA25         p         3.7332         -5.73         -6.4         -0.6         0.5         467         400         5.44         85           PA25         p         1.7229         -4.33         -5.1         -0.6         0.6         245         210         239         0           PA27         p         1.7229         -4.33         -10         0.6         90         77         17         6           PA29         p         0.9011         -5.32         -10.8         -0.7         0.6         327         321         78         9           PA31         p         1.028         -2.92         -6.50         -6.6         0.5         228         105         737         8           PA32         p         1.150         -4.87         -3.5         -0.6         0.6         128         1097         609         8           PA33         p         0.12376         -507         -6.6         0.7         135         116         79         45           PA33         p         1.1000         -4.44         0.2         -6.6         0.6         1224         96         0.33         81           PA43         p	PA24	p n	L	3 2115	-3.58	2.4	-0.5	0.5	577	495	464	7		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA25	p n		3 7332	-573	-64	-0.6	0.5	467	400	544	85		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA26	p D		12280	-514	-51	-0.8	0.6	245	210	269	11		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA27	p D		1.7429	-4.33	511	0.0	0.0	210	210	27	0		
PA29       P       0.9011       -5.32       -10.8       -0.9       0.5       267       229       29       0         PM31       P       3.9765       -5.05       -6.9       -0.6       0.5       228       195       327       8         PM31       P       1.1550       -2.08       -0.7       2.48       213       74       0         PM34       P       0.9944       -5.31       -7.7       -10       0.6       226       194       271       13         PM35       P       0.2944       -5.07       -6.8       -11       0.6       155       133       184       14         PM36       P       0.8947       -4.73       -0.2       -0.6       0.6       1280       1997       609       8         PM31       P       1.1500       -5.12       -0.6       0.6       572       490       404       26         PM43       P       1.353       -5.12       -0.0       0.5       532       456       333       81       7         PM44       P       1.2024       -5.74       3.8       -10       16       105       90       57       34	PA28	D		1.7695	-4.98	- 7.5	-1.2	0.6	90	77	174	6		
PA30       p       1.2522       -4.77       -6.3       -0.7       0.6       375       321       78       9         PA31       p       1.1208       -2.38	PA29	p		0.9011	- 5.32	- 10.8	-0.9	0.5	267	229	292	0		
PA31       p       3.9765       -5.05       -6.6       0.5       22.8       135       237       8         PA32       p       1.1508       -2.84       -148       2         PA33       p       1.1508       -2.48       -7.7       -10       0.6       226       194       74       0         PA35       p       1.2376       -5.07       -6.8       -11       0.6       125       1133       184       14         PA35       p       2.0017       -5.96       3.0       -0.6       0.6       125       1135       16       79       45         PA38       p       1.1500       -5.12       -0.6       0.6       572       490       44       26         PA44       p       1.2900       -5.12       -0.6       0.5       522       491       33       81         PA44       p       1.3033       -4.86       -1.4.5       -0.6       0.5       522       496       313       81         PA44       p       1.3333       -5.1       -3.1       -0.7       0.6       233       183       81       73         PA44       p       1.3233       -4.0	PA30	p		1.2522	-4.77	-6.3	-0.7	0.6	375	321	78	9		
PA32       p       1.1208       -2.98	PA31	p		3.9765	-5.05	-6.9	-0.6	0.5	228	195	237	8		
PA34       p       11550       -4.87       -3.5       -0.8       0.7       248       213       74       0         PA35       p       12376       -5.07       -6.8       -11       0.6       155       133       184       14         PA35       p       2.007       -5.96       3.0       -0.6       0.6       1280       1097       609       8         PA37       p       2.007       -5.96       3.0       -0.6       0.6       572       490       404       26         PA38       p       1.1500       -4.34       0.2       -0.6       0.6       572       490       404       26         PA49       p       1.335       -5.15       -3.1       -0.7       0.6       532       191       55       62         PM42       p       H       3.0033       -4.86       -1.45       -0.6       0.5       532       181       31       71       749         PA44       p       1.3353       -5.15       -3.1       -0.7       0.5       333       81       37       92         PA45       p       2.3256       -4.87       8.5       -0.5       1.1	PA32	p		1.1208	-2.98						148	2		
PA34       p       0.9944       -5.31       -7.7       -1.0       0.6       226       194       271       13         PA35       p       0.8947       -4.73       -0.2       -0.6       0.6       155       133       184       14         PA36       p       0.8947       -4.73       -0.2       -0.6       0.6       1280       1097       609       8         PA38       p       1.4933       -3.55       -       0       -       0         PA39       p       1.4933       -3.55       -       0.6       572       490       404       26         PA41       p       1.700       -5.12       -4.0       -0.6       0.5       532       456       333       81         PA42       p       H       30033       -5.43       8.1       -0.7       0.6       303       283       118       37         PA44       unk       1.16425       -5.74       3.8       -0.1       116       105       90       57       34         PA45       p       2.3526       -4.87       8.5       -0.5       11       87       75       70       49       444       <	PA33	p		1.1550	-4.87	- 3.5	-0.8	0.7	248	213	74	0		
PA36       p       1.2376       -5.07       -6.6       -1.1       0.6       155       133       184       14         PA36       p       2.0017       -5.96       3.0       -0.2       -0.6       0.6       1280       1097       609       8         PA37       p       2.0017       -5.96       3.0       -0.6       0.6       7572       160       79       45         PA38       p       1.1500       -4.34       0.2       -0.6       0.6       572       490       404       26         PA40       p       1.2333       -3.35        0        0         PA44       p       1.0700       -5.12       -4.0       -0.7       0.6       223       191       55       62         PA44       p       1.3333       -4.86       -1.4.5       -0.6       0.5       330       283       118       37         PA44       p       1.3233       -4.57       -5.71       3.8       -0.7       0.9       104       89       57       49         P445       p       1.1633       -5.45       -1.8       -0.6       0.6       995       853 <th< td=""><td>PA34</td><td>p</td><td></td><td>0.9944</td><td>- 5.31</td><td>- 7.7</td><td>-1.0</td><td>0.6</td><td>226</td><td>194</td><td>271</td><td>13</td><td></td><td></td></th<>	PA34	p		0.9944	- 5.31	- 7.7	-1.0	0.6	226	194	271	13		
PA36       p       0.8947       -4.73       -0.2       -0.6       0.6       1280       1097       609       8         PA37       p       2.0017       -5.96       3.0       -0.6       0.7       135       116       79       45         PA38       p       1.4933       -3.55       0       0         PA41       p       L       2.5249       -5.75       0       0         PA41       p       1.7300       -5.12       -4.0       -0.7       0.6       2.32       191       55       62         PA42       p       H       3.033       -5.15       -3.1       -0.7       0.6       333       283       118       37         PA43       p       1.3835       -5.15       -3.1       -0.7       0.6       330       283       118       37         PA44       unk       1.16425       -5.74       3.8       -0.0       1187       75       70       40         PA45       p       1.3238       -4.27       0.4       0.6       1072       919       782       7         PA46       p       1.3533       -4.01       1.0       93       80	PA35	р		1.2376	-5.07	-6.8	-1.1	0.6	155	133	184	14		
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	PA36	р		0.8947	-4.73	-0.2	-0.6	0.6	1280	1097	609	8		
PA38       p       11500       -4.34       0.2       -0.6       0.6       572       490       404       26         PA40       p       L       2.5249       -5.75       0         PA41       p       1.7900       -5.12       -4.0       -0.7       0.6       223       191       55       62         PA42       p       H       3.0033       -4.86       -14.5       -0.6       0.5       532       456       333       81         PA43       unk       1.6425       -5.74       3.8       -1.0       1.6       105       90       57       34         PA44       unk       1.6425       -5.74       3.8       -1.0       1.6       105       90       57       34         PA45       p       2.3526       -4.87       8.5       -0.5       1.1       87       75       70       40         PA46       p       1.3528       -4.27       0.4       -0.6       0.6       1072       919       782       7         PA48       p       1.2328       -5.03       1.3       -0.6       0.6       454       639       608       74         PA51	PA37	р		2.0017	-5.96	3.0	-0.6	0.7	135	116	79	45		
PA30       p       L       L       L       L       S2540       -575       0         PA41       p       1.7000       -5.12       -4.0       -0.7       0.6       223       191       55       62         PA42       p       H       3.0033       -4.86       -14.5       -0.6       0.5       532       456       333       81         PA44       unk       1.6425       -5.74       3.8       -10.7       0.6       320       283       118       37         PA44       unk       1.6425       -5.74       3.8       -0.7       0.9       104       89       57       49         PA45       p       2.3526       -4.87       0.4       -0.6       0.6       1072       919       782       7         PA46       p       2.4770       -5.71       3.8       -0.7       0.9       104       89       57       49         PA47       p       1.1633       -5.45       -1.8       -1.2       1.0       93       80       494       85         PA50       Im 7       1.1539       -4.06       0.6       745       639       608       74       74     <	PA38	р		1.1500	-4.34	0.2	-0.6	0.6	572	490	404	26		
PA40       p       L       2.574       -5.75       -5.75         PA41       p       1.7900       -5.12       -4.0       -0.7       0.6       2.33       155       52         PA42       p       H       3.0033       -4.86       -14.5       -0.6       0.5       532       456       333       81         PA43       p       1.8335       -5.15       -3.1       -0.7       0.6       233       283       118       37         PA44       unk       1.6425       -5.74       3.8       -10       1.6       105       90       57       34         PA45       p       2.3526       -4.87       8.5       -0.5       1.1       87       75       70       40         PA46       p       1.3238       -4.07       0.9       104       89       57       49         PA47       p       1.3593       -4.01       -12       10.9       380       494       85         PA49       p       1.3633       -5.71       0.7       -0.6       0.6       745       639       608       74         PA51       p       2.8825       -5.77       10.7       -5.	PA39	lm ?		1.4933	- 3.55						0			
PA41 p H22 p H 3.003 -4.86 -14.5 -0.6 0.5 532 456 333 81 PA42 p H 3.003 -4.86 -14.5 -0.6 0.5 532 456 333 81 PA43 p 1.3835 -5.15 -3.1 -0.7 0.6 330 2.83 118 37 PA44 unk 1.6425 -5.74 3.8 -0.7 0.9 105 90 57 34 PA45 p 2.3326 -4.87 8.5 -0.5 1.1 87 75 70 40 PA46 p 2.4770 -5.71 3.8 -0.7 0.9 104 89 57 49 PA47 p 1.2538 -4.27 0.4 -0.6 0.6 1072 919 782 7 PA48 p 1.3928 -5.03 1.3 -0.6 0.6 995 853 834 22 PA49 p 1.3623 -4.45 -1.8 -1.2 1.0 93 80 494 85 PA50 lm 7 1.3693 -4.01 PA52 p 0.07370 -5.71 0.7 -0.6 0.6 541 498 341 46 PA52 p 0.07370 -5.71 0.7 -0.6 0.6 581 498 341 46 PA52 p 0.07370 -5.71 0.7 -0.6 0.6 581 498 341 46 PA53 unk 3.3445 -5.79 PA54 lm 7 0.8656 -3.50 PA54 lm 7 0.8656 -3.50 PA55 lm 7 1.1777 -5.27 PA56 p 0.6544 -6.36 -3.2 -0.6 0.6 487 417 338 13 1.2 0.15 PA58 P H 0.9998 -5.40 -0.8 -0.6 0.6 386 331 72 52 PA59 p L 2.5684 -4.42 PA60 p L 1.9878 -6.10 3.5 -0.5 1074 921 620 86 PA61 9 L 1.9878 -6.10 3.5 -0.5 1074 921 620 86 PA63 e 0.9902 -1.121 PA64 e 0.9902 -1.121 PA66 P L 3.3804 -4.46 PA63 e 0.9902 -1.121 PA64 e 0.9902 -1.121 PA66 P L 0.3818 -4.59 PA64 e 0.9902 -1.121 PA66 P L 0.4315 -5.59 -2.5 -0.5 1074 921 620 86 PA63 9 L 1.4952 -4.56 PA64 9 L 0.442 -0 PA64 9 L 0.445 -5.59 -2.4 -0.5 0.5 842 705 648 3 PA65 P L 0.4523 -5.59 -2.4 -0.5 0.5 842 705 648 3 PA66 9 L 0.4452 -4.56 PA67 P L 0.8318 -4.59 -2.4 -0.0 8.27 195 184 100 PA66 9 L 0.4523 -5.59 -1.2 1.2 2.75 2.36 2.62 100 PA66 9 L 0.4523 -5.59 -1.2 1.2 2.75 2.36 2.62 100 PA66 9 L 0.4533 -5.59 -1.2 1.2 2.75 1.5 2.62 100 PA66 9 L 0.4533 -5.59 -1.2 1.2 2.75 1.5 2.62 100 PA66 9 L 0.4533 -5.59 -2.4 -0.5 0.5 1.44 953 1.28 1.4 PA70 P L 0.4215 -5.59 -2.5 -0.6 0.6 1.114 955 1028 1.4 PA71 9 L 0.4215 -5.59 -2.5 -0.6 0.6 1.114 955 1028 1.4 PA71 9 L 0.4215 -5.59 -2.4 -0.5 0.5 1.44 5.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	PA40	р	L	2.5249	- 5.75						0			
PA42 p H H 3.003 -4.86 -14.5 -0.6 0.5 532 456 333 81 PA43 p 1.3835 -5.15 -3.1 -0.7 0.6 330 2.83 118 37 PA44 unk 1.6425 -5.74 3.8 -1.0 1.6 105 90 57 34 PA45 p 2.3526 -4.87 8.5 -0.5 1.1 87 75 70 40 PA46 p 2.4770 -5.71 3.8 -0.7 0.9 104 89 57 49 PA47 p 1.2538 -4.27 0.4 -0.6 0.6 1072 919 782 7 PA48 p 1.3282 -5.03 1.3 -0.6 0.6 995 853 834 22 PA49 p 1.1653 -5.45 -1.8 -1.2 1.0 93 80 494 85 PA50 Im 7 1.3593 -4.01 PA51 p 2.8825 -5.57 1.3 -0.6 0.6 581 498 341 46 PA53 unk 3.3445 -5.79 PA55 Im 7 1.177 -5.27	PA41	р		1.7900	- 5.12	-4.0	-0.7	0.6	223	191	55	62		
PA43 p 1385 -5.15 -3.1 -0.7 0.6 330 283 118 37 PA44 unk 16425 -5.74 3.8 -1.0 1.6 105 90 57 34 PA45 p 2.3526 -4.87 8.5 -0.5 1.1 87 75 70 40 PA46 p 2.4770 -5.71 3.8 -0.7 0.9 104 89 57 49 PA47 p 1.2538 -4.27 0.4 -0.6 0.6 1072 919 782 7 PA48 p 1.3593 -4.01 PA50 lm 7 1.3593 -4.01 PA52 p 0.7370 -5.71 0.7 -0.6 0.6 745 639 608 7.4 PA52 p 0.7370 -5.71 0.7 -0.6 0.6 581 498 341 46 PA53 unk 3.3445 -5.79 PA54 lm 7 0.8656 -3.50 PA55 lm 7 1.1177 -5.27 PA58 p H 0.9988 -5.40 -0.8 -0.6 0.6 3124 963 859 92 PA57 p S 1.1167 -4.96 -1.1 -0.6 0.6 487 417 338 13 1.2 0.15 PA58 p H 0.9988 -5.40 -0.8 -0.6 0.6 386 331 72 52 PA59 p L 2.5684 -4.42 PA60 p L 1.9878 -6.10 3.5 -0.5 0.5 1074 921 620 86 PA61 p L 3.3804 -4.46 PA63 e 0.9902 -11.21 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 823 705 648 3 PA66 e S 0.8847 -9.90 2.5 -0.6 0.7 741 635 638 69 2.3 0.15 PA66 e S 0.8847 -9.90 2.5 -0.6 0.7 741 635 638 69 2.3 0.15 PA66 e S 0.8848 -4.59 -2.4 -10 0.8 227 195 184 100 PA67 p L 0.8318 -4.59 -2.4 -10 0.8 227 195 184 100 PA68 p L 0.6323 -5.59 -1.2 1.2 275 236 262 100 PA66 e S 0.8848 -9.59 -2.4 -10 0.8 227 195 184 100 PA68 p L 0.523 -5.59 -1.2 1.2 275 236 262 100 PA69 p L 1.4254 -5.59 -1.2 1.2 275 236 262 100 PA64 e S 0.8848 -4.59 -2.4 -10 0.8 227 195 184 100 PA64 e S 0.8848 -4.59 -2.4 -10 0.8 227 195 184 100 PA64 e S 0.8848 -4.59 -2.4 -10 0.8 227 195 184 100 PA64 PA7 P9 L 0.235 -5.59 -1.2 12 275 236 262 100 PA64 PA7 P9 L 0.235 -5.59 -1.2 12 275 236 262 100 PA64 PA7 P9 L 0.235 -5.59 -1.2 12 275 236 262 100 PA68 P L 0.4245 -5.59 -1.2 12 275 236 262 100 PA69 P L 0.4245 -5.59 -2.5 -0.6 0.6 184 158 64 11 PA71 PA71 P L 0.235 -5.50 -1.2 12 275 236 262 100 PA69 P L 0.4245 -5.59 -2.5 -0.6 0.6 184 158 64 11 PA71 PA71 P L 0.235 -5.50 -1.2 12 275 236 262 100 PA69 P L 0.4245 -5.59 -2.5 -0.6 0.6 184 158 64 11 PA71 PA71 PA71 PA71 PA71 PA71 PA71 PA71	PA42	р	Н	3.0033	-4.86	- 14.5	-0.6	0.5	532	456	333	81		
PA44 unk 16425 -5.74 3.8 -10 1.6 105 90 57 34 PA45 p 2.3526 -4.87 8.5 -0.5 1.1 87 75 70 40 PA46 p 2.4770 -5.71 3.8 -0.7 0.9 104 89 57 49 PA47 p 1.2538 -4.27 0.4 -0.6 0.6 1072 919 782 7 PA48 p 1.3523 -5.45 -1.8 -1.2 1.0 93 80 494 85 PA50 lm ? 1.3593 -4.01 - PA51 p 2.8825 -5.57 1.3 -0.6 0.6 745 639 608 7.4 PA53 unk 3.3445 -5.79 - PA54 lm ? 0.8656 -3.50 - PA55 lm ? 1.1777 -5.77 - PA54 lm ? 0.8656 -3.50 - PA55 lm ? 1.1777 -5.27 - PA58 p H 0.9998 -5.40 -1.1 -0.6 0.6 487 417 338 13 1.2 0.15 PA58 p H 0.9998 -5.40 -1.1 -0.6 0.6 386 331 72 52 PA59 p L 2.5684 -4.42 - PA60 p L 1.9578 -6.10 3.5 -0.5 0.5 1074 921 620 86 PA61 p L 3.3804 -4.46 - PA64 e 0.9902 -1.12 -0.5 0.5 823 705 648 3 PA65 e 0.9902 -1.12 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 823 705 648 3 PA65 e 0.9902 -1.12 - PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 0.9902 -1.12 - PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 0.9902 -1.12 - PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 0.9902 -1.12 - PA64 e 0.9902 -1.12 - PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 0.9902 -1.12 - PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -0.5 0.5 3452 2959 2720 100 PA64 e 1.9441 -5.10 -2.1 -1.2 1.2 275 236 522 100 PA67 p L 0.2135 -5.07 - PA7 1 10	PA43	р		1.3835	- 5.15	- 3.1	-0.7	0.6	330	283	118	37		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	PA44	unk		1.6425	- 5.74	3.8	- 1.0	1.6	105	90	57	34		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	PA45	р		2.3526	-4.87	8.5	-0.5	1.1	87	75	70	40		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	PA46	р		2.4770	- 5.71	3.8	-0.7	0.9	104	89	57	49		
PA48       p       1.3928      0.03       1.3       -0.6       0.6       995       853       834       22         PA49       p       1.1553      5.45       -1.8       -1.2       1.0       93       80       494       85         PA50       Im ?       1.3593       -4.01	PA47	р		1.2538	-4.27	0.4	-0.6	0.6	1072	919	/82	/		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	PA48	р		1.3928	- 5.03	1.3	-0.6	0.6	995	853	834	22		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	PA49	p Im 2		1.1653	- 5.45	- 1.8	- 1.2	1.0	93	80	494	85		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA50	im ?		1.3593	-4.01	10	0.0	0.0	745	<b>C</b> 20	C09	74		
PAS3       unk       33445       -5.79       -0.6       0.6       581       496       341       46         PAS3       unk       33445       -5.79       -5.79       -10.6       0.6       1124       963       859       92         PA55       lm ?       1.1777       -5.27       -0.6       0.6       1124       963       859       92         PA57       p       \$       1.1167       -4.96       -1.1       -0.6       0.6       487       417       338       13       1.2       0.15         PA58       p       H       0.9998       -5.40       -0.8       -0.6       0.6       386       331       72       52         PA59       p       L       2.5684       -4.42       0 <t< td=""><td>PASI</td><td>р</td><td></td><td>2.8825</td><td>- 5.57</td><td>1.3</td><td>-0.6</td><td>0.6</td><td>745</td><td>639</td><td>008</td><td>7.4</td><td></td><td></td></t<>	PASI	р		2.8825	- 5.57	1.3	-0.6	0.6	745	639	008	7.4		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	PA52	p		0.7370	- 5.71	0.7	-0.6	0.6	581	498	341	46		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	PA35 DA54	lm 2		0.8656	- 5.79									
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA54 DA55	lin ?		1 1777	- 5.30							12		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA56	nn :		0.6544	- 5.27	_32	-06	0.6	1124	963	850	13		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	DA57	P	s	1 1167	- 4.96	- 11	-0.6	0.0	/124	/17	338	13	12	0.15
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	DA 58	P	л Ц	0.0008	- 5.40	- 0.8	-0.6	0.0	386	321	72	52	1.2	0.15
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA59	P D	I	2 5684	-442	0.0	0.0	0.0	500	551	0	52		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PA60	p n	L	19878	-610	35	-05	0.5	1074	921	620	86		
PAG2pL1.4952-4.560PAG3e $0.9902$ $-11.21$ 0PAG4e $1.9441$ $-5.10$ $-2.1$ $-0.5$ $0.5$ $823$ $705$ $648$ $3$ PA65e $0.9823$ $-19.40$ $7.9$ $-0.5$ $0.5$ $3452$ $2959$ $2720$ $100$ PA66eS $0.8847$ $-9.90$ $2.5$ $-0.6$ $0.7$ $741$ $635$ $638$ $69$ $2.3$ $0.15$ PA67pL $0.8318$ $-4.59$ $-2.4$ $-1.0$ $0.8$ $227$ $195$ $184$ $100$ PA68pL $0.5623$ $-5.59$ $-1.2$ $1.2$ $275$ $236$ $262$ $100$ PA69pL $1.4254$ $-5.29$ $-2.5$ $-0.6$ $0.6$ $1114$ $955$ $1028$ $14$ PA70pL $0.2135$ $-5.07$ $184$ $158$ $64$ $11$ PA71eS $1.519$ $-8.36$ 14 $0$ PA72unk $1.0974$ $-4.46$ $0$ $0$	PA61	p n	Ē.	3 3804	-446	515	010	015	1071	021	0	00		
PAG3e0.9902-11.210PAG4e $1.9441$ $-5.10$ $-2.1$ $-0.5$ $0.5$ $823$ $705$ $648$ $3$ PA65e $0.9823$ $-19.40$ $7.9$ $-0.5$ $0.5$ $3452$ $2959$ $2720$ $100$ PA66eS $0.8847$ $-9.90$ $2.5$ $-0.6$ $0.7$ $741$ $635$ $638$ $69$ $2.3$ $0.15$ PA67pL $0.8318$ $-4.59$ $-2.4$ $-1.0$ $0.8$ $227$ $195$ $184$ $100$ PA68pL $0.5623$ $-5.59$ $-1.2$ $1.2$ $275$ $236$ $262$ $100$ PA69pL $1.4254$ $-5.29$ $-2.5$ $-0.6$ $0.6$ $1114$ $955$ $1028$ $14$ PA70pL $0.2135$ $-5.07$ $184$ $158$ $64$ $11$ PA71eS $1.1519$ $-8.36$ $14$ $0$ PA72unk $1.0974$ $-4.46$ $0$ $0$	PA62	p	Ē	1.4952	-4.56						0			
PA64       e       1.9441       -5.10       -2.1       -0.5       0.5       823       705       648       3         PA65       e       0.9823       -19.40       7.9       -0.5       0.5       3452       2959       2720       100         PA66       e       S       0.8847       -9.90       2.5       -0.6       0.7       741       635       638       69       2.3       0.15         PA67       p       L       0.8318       -4.59       -2.4       -1.0       0.8       227       195       184       100         PA68       p       L       0.6623       -5.59       -1.2       1.2       275       236       262       100         PA69       p       L       1.4254       -5.29       -2.5       -0.6       0.6       1114       955       1028       14         PA70       p       L       0.2135       -5.07       184       158       64       11         PA71       e       S       1.1519       -8.36       14       0       0         PA72       unk       1.0974       -4.46       0       0       0       0 <td>PA63</td> <td>e</td> <td>2</td> <td>0.9902</td> <td>- 11.21</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td>	PA63	e	2	0.9902	- 11.21						0			
PA65       e       0.9823       -1.940       7.9       -0.5       0.5       3452       2959       2720       100         PA66       e       S       0.8847       -9.90       2.5       -0.6       0.7       741       635       638       69       2.3       0.15         PA67       p       L       0.8318       -4.59       -2.4       -1.0       0.8       227       195       184       100         PA68       p       L       0.5623       -5.59       -1.2       1.2       275       236       262       100         PA69       p       L       0.2135       -5.29       -2.5       -0.6       0.6       1114       955       1028       14         PA70       p       L       0.2135       -5.07       184       158       64       11         PA71       e       S       1.1519       -8.36       14       0         PA72       unk       1.0974       -4.46       0       0	PA64	e		1.9441	-510	-21	-0.5	0.5	823	705	648	3		
PA66     e     S     0.8847     -9.90     2.5     -0.6     0.7     741     635     638     69     2.3     0.15       PA67     p     L     0.8318     -4.59     -2.4     -1.0     0.8     227     195     184     100       PA68     p     L     0.5623     -5.59     -1.2     1.2     275     236     262     100       PA69     p     L     1.4254     -5.29     -2.5     -0.6     0.6     1114     955     1028     14       PA70     p     L     0.2135     -5.07     184     158     64     11       PA71     e     S     1.1519     -8.36     14     0       PA72     unk     1.0974     -4.46     0	PA65	e		0.9823	- 19 40	79	-0.5	0.5	3452	2959	2720	100		
PA67       p       L       0.8318       -4.59       -2.4       -1.0       0.8       227       195       184       100         PA68       p       L       0.5623       -5.59       -1.2       1.2       275       236       262       100         PA69       p       L       1.4254       -5.29       -2.5       -0.6       0.6       1114       955       1028       14         PA70       p       L       0.2135       -5.07       184       158       64       11         PA71       e       S       1.1519       -8.36       14       0         PA72       unk       1.0974       -4.46       0	PA66	e	S	0.8847	- 9.90	2.5	-0.6	0.7	741	635	638	69	2.3	0.15
PA68     p     L     0.5623     -5.59     -1.2     1.2     275     236     262     100       PA69     p     L     1.4254     -5.29     -2.5     -0.6     0.6     114     955     1028     14       PA70     p     L     0.2135     -5.07     184     158     64     11       PA71     e     S     1.1519     -8.36     14     0       PA72     unk     1.0974     -4.46     0	PA67	D	L	0.8318	-4.59	-2.4	- 1.0	0.8	227	195	184	100	2,5	0.15
PA69     p     L     1.4254     -5.29     -2.5     -0.6     0.6     1114     955     1028     14       PA70     p     L     0.2135     -5.07     184     158     64     11       PA71     e     S     1.1519     -8.36     14     0       PA72     unk     1.0974     -4.46     0	PA68	p	L	0.5623	- 5.59	2	- 1.2	1.2	275	236	262	100		
PA70 p L 0.2135 -5.07 184 158 64 11 PA71 e S 1.1519 -8.36 14 0 PA72 unk 1.0974 -4.46 0	PA69	p	L	1.4254	- 5.29	-2.5	-0.6	0.6	1114	955	1028	14		
PA71 e S 1.1519 -8.36 14 0 PA72 unk 1.0974 -4.46 0	PA70	p	L	0.2135	- 5.07				184	158	64	11		
PA72 unk 1.0974 -4.46 0	PA71	e	S	1.1519	- 8.36						14	0		
	PA72	unk		1.0974	-4.46						0			

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