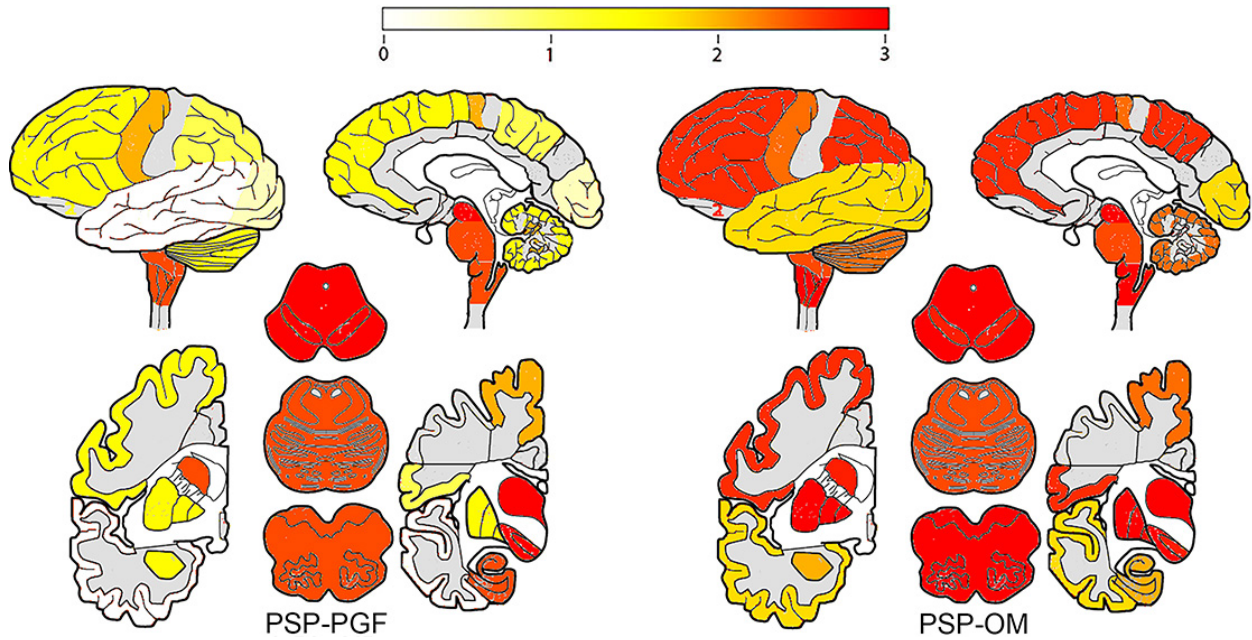


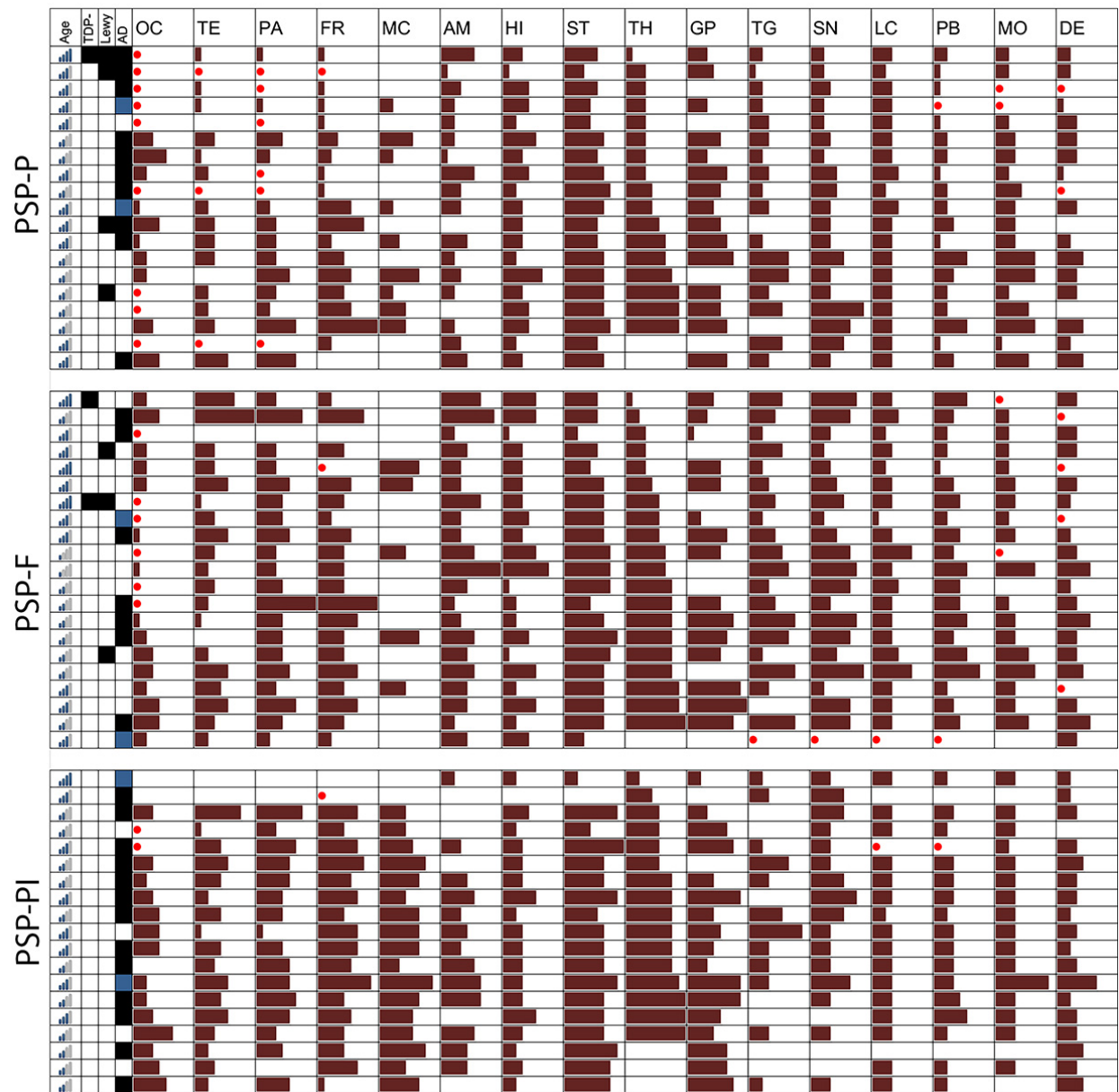
ONLINE SUPPLEMENTAL FILE

Distribution patterns of tau pathology in progressive supranuclear palsy

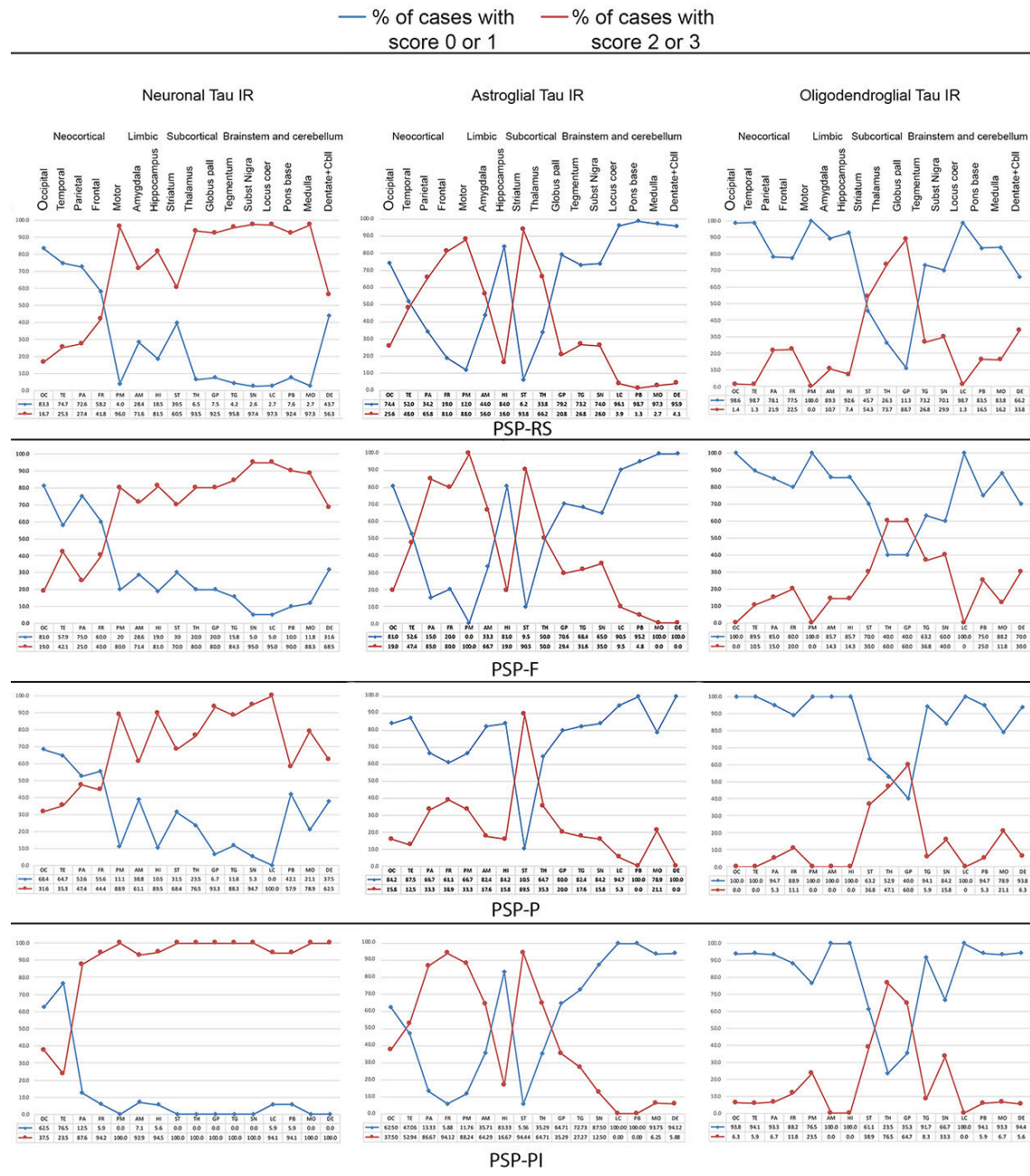
Suppl. Figure 1. Heat mapping of total tau scores in PSP with progressive gait freezing, (PSP-PGF), PSP with predominant ocular motor dysfunction (PSP-OM). The severity of tau pathology ranges from white (none) through yellow and orange to red (severe). Grey colored regions indicate that the region was not evaluated.



Suppl. Figure 3. Combined scores of neuronal, astroglial, and oligodendroglial tau pathologies in PSP-Parkinsonism (P), PSP-frontal variant (PSP-F), and PSP-postural instability (PI) syndrome in different anatomical regions. See legend for Suppl. 1/ Figure 2 for coding of bars and regions.



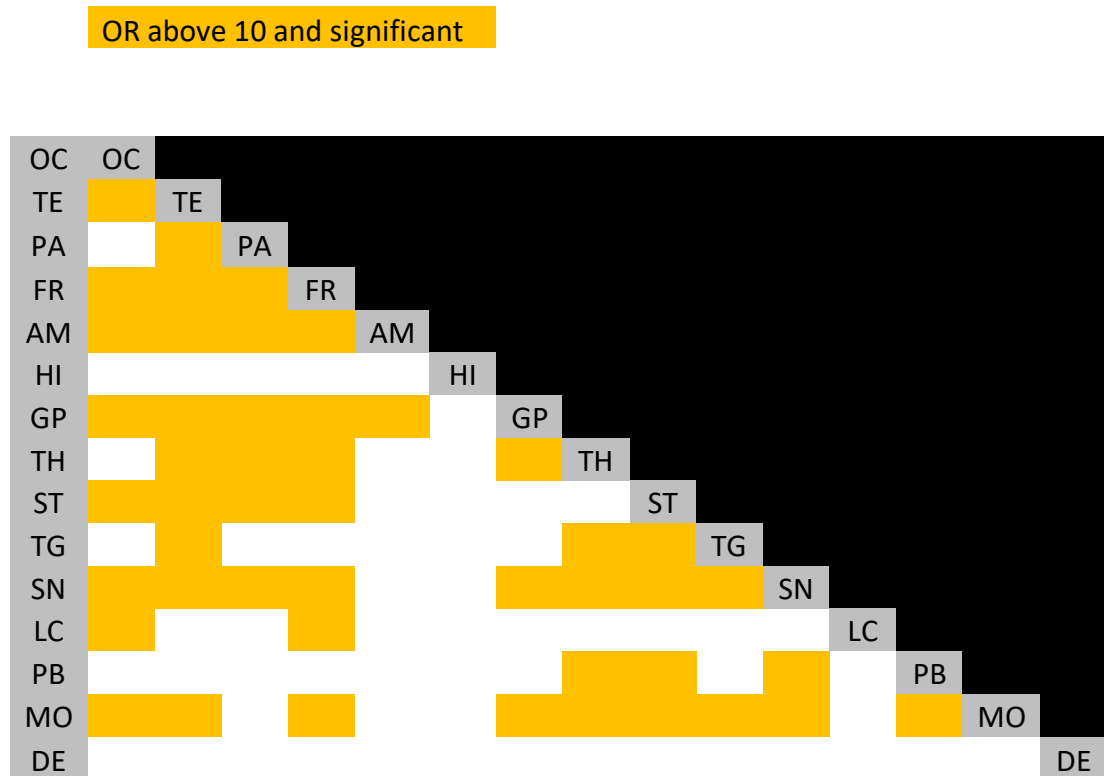
Suppl. Figure 4. Graphic representation the frequencies of cases with high (2 or 3) and low (0 or 1) scores in different anatomical regions in distinct clinical subtypes (PSP-RS, PSP-F, PSP-P, and PSP-PI).



Suppl. Figure 5. Conditional probability matrix for all regions and total tau pathology in pooled cases of PSP-RS, PSP-P, PSP-F, PSP-SL, PSP, PI and PSP-CBS. Underlined and bold indicates $p < 0.01$, and bold indicates $p < 0.05$. If the conditional probability is high for both and significant we interpret the results based on the frequencies of involvement of the examined variable in regions; in this case the value associated to the more frequently involved region is highlighted by red colour.

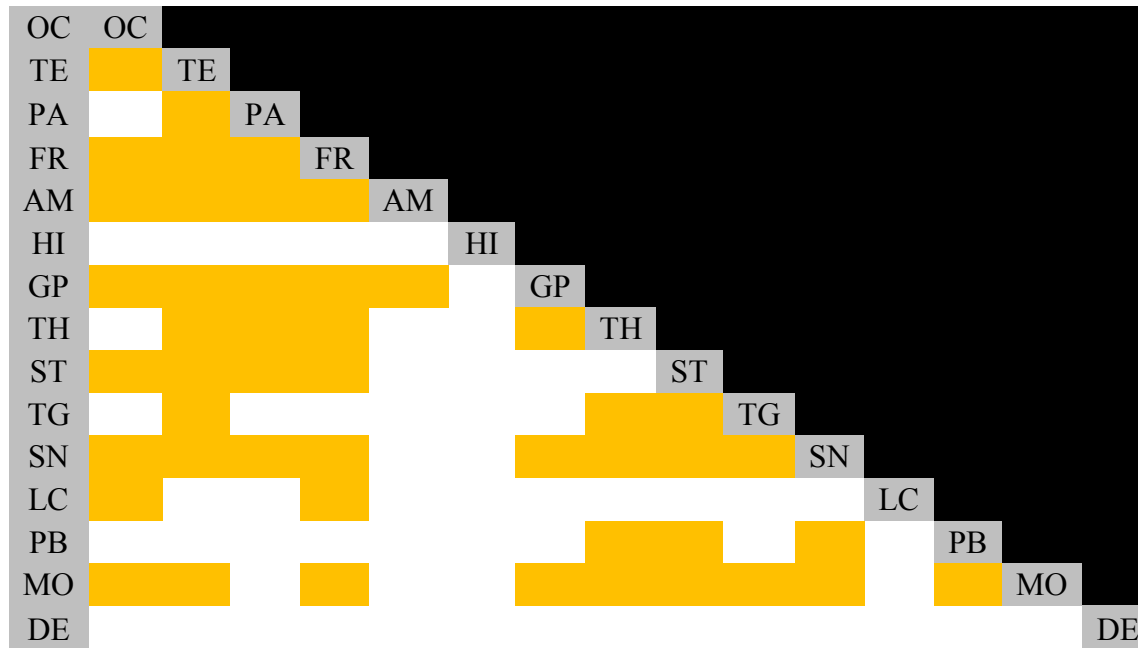
OC	OC	<u>0.16</u>	<u>0.23</u>	<u>0.14</u>	<u>0.14</u>	<u>0.15</u>	<u>0.15</u>	<u>0.5</u>	<u>0</u>	<u>0.21</u>	<u>0.33</u>	<u>0</u>	<u>0</u>	<u>0.12</u>	<u>0.31</u>
TE	<u>0.5</u>	TE	<u>0.25</u>	<u>0.26</u>	<u>0.1</u>	<u>0.38</u>	<u>0.6</u>	<u>0.6</u>	<u>0</u>	<u>0.57</u>	<u>0.33</u>	<u>0.75</u>	<u>1</u>	<u>0.5</u>	<u>0.48</u>
PA	<u>0.72</u>	<u>0.53</u>	PA	0.23	0.66	0.63	<u>0.55</u>	<u>0.22</u>	<u>0</u>	<u>0.74</u>	<u>0.33</u>	<u>1</u>	<u>1</u>	<u>0.37</u>	0.63
FR	<u>0.75</u>	<u>0.66</u>	0.44	FR	0.66	0.73	<u>0.36</u>	<u>0.4</u>	<u>0</u>	<u>0.3</u>	<u>0.33</u>	<u>0.75</u>	<u>0.66</u>	<u>0.12</u>	0.62
AM	<u>0.8</u>	<u>0.67</u>	0.79	0.75	AM	0.44	0.91	1	<u>0.5</u>	0.85	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0.91</u>
HI	<u>0.83</u>	<u>0.81</u>	<u>0.8</u>	0.82	0.52	HI	0.84	0.9	<u>0.5</u>	0.85	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0.88</u>
GP	<u>0.88</u>	<u>0.93</u>	<u>0.88</u>	<u>0.74</u>	0.95	0.9	GP	0.8	<u>0.5</u>	0.71	<u>0.33</u>	0.75	<u>0.66</u>	0.57	<u>0.88</u>
TH	<u>0.94</u>	<u>0.92</u>	<u>0.8</u>	<u>0.76</u>	1	0.95	0.85	TH	<u>0.5</u>	<u>0.42</u>	0.66	1	1	0.57	<u>0.87</u>
ST	<u>0.98</u>	<u>0.96</u>	<u>0.94</u>	<u>0.92</u>	<u>0.95</u>	<u>0.95</u>	<u>0.92</u>	<u>0.9</u>	ST	<u>0.85</u>	0.66	1	1	0.87	<u>0.94</u>
TG	<u>0.88</u>	<u>0.87</u>	<u>0.35</u>	<u>0.65</u>	0.9	0.9	0.71	<u>0</u>	<u>0</u>	TG	<u>0.33</u>	0.75	<u>0.66</u>	0.42	<u>0.75</u>
SN	<u>0.97</u>	<u>0.96</u>	<u>0.94</u>	<u>0.92</u>	<u>1</u>	<u>1</u>	<u>0.85</u>	0.87	0.5	<u>0.85</u>	SN	0.75	0.66	0.75	<u>0.91</u>
LC	<u>0.95</u>	<u>0.98</u>	<u>1</u>	<u>0.96</u>	<u>1</u>	<u>1</u>	0.91	1	1	0.91	0.66	LC	0	0.75	<u>0.97</u>
PB	<u>0.96</u>	<u>1</u>	<u>1</u>	<u>0.96</u>	<u>1</u>	<u>1</u>	<u>0.92</u>	1	1	<u>0.92</u>	0.66	0.25	PB	0.75	<u>0.97</u>
MO	<u>0.92</u>	<u>0.92</u>	<u>0.85</u>	<u>0.7</u>	<u>1</u>	1	0.72	0.62	0.5	0.69	0.33	0.5	0.33	MO	<u>0.79</u>
DE	<u>0.73</u>	<u>0.67</u>	0.63	0.51	<u>0.84</u>	<u>0.76</u>	<u>0.71</u>	<u>0.55</u>	<u>0</u>	<u>0.38</u>	<u>0</u>	<u>0.75</u>	<u>0.66</u>	<u>0.12</u>	DE

Suppl. Figure 6. Results of the binary logistic regression analyses corrected for age, duration of illness and presence of AD pathology (defined by presence of amyloid plaques). Orange box indicates odds ratios above 10 and significant.



Suppl. Figure 8. Results of the binary logistic regression analyses for total tau in PSP-RS cases corrected for age, duration of illness and presence of AD pathology (defined by presence of amyloid plaques). Orange box indicates odds ratios above 10 and significant.

OR above 10 and significant



Suppl. Figure 9. Staging of PSP-related tau pathology developed by the evaluation of PSP-RS cases (see manuscript) in clinical subtypes PSP-P, PSP-F, PSP-SL, PSP-CBS, and PSP-PI. Gray colored columns indicate the strategic regions for staging. Red colored boxes indicate where discrepancy was observed and where the parietal cortex fits better to the stage than frontal cortex.

			TH/STN	GP	SN	SR	TG	LC	PB	MO	DE/Cbll	AM	HI	FR	PA	TE	OC			
Age	Sex	FINAL CLINICAL	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	Stage	
			OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	ASTRO	OLIGO	
79	1	P	0	2	1	0	2	0	0	2	1	1	0	0	0	0	0	0	3	
94	1	P	0	0	1	0	2	1	0	0	2	3	1	1	0	0	0	1	0	0
81	2	P	0	0	3	0	0	3	0	0	2	2	0	0	0	0	0	0	0	3
81	1	P	1	1	1	1	2	0	1	3	1	1	0	0	2	1	0	0	0	3
78	1	P	1	1	1	0	3	3	1	1	2	3	2	1	0	1	0	0	0	3
67	1	P	0	2	2	0	3	2	0	1	3	3	1	0	1	1	0	0	0	3
78	1	P						2	3	3	1	1	0	2	3	0	0	0	0	3
72	2	P	0	0	3	2	0	3	0	0	3	3	0	3	0	0	3	2	0	3
81	2	P	0	0	3				0	2	2	0	0	3	0	0	2	0	0	3
82	1	P	2	1	3	3	0	3	0	0	3	3	0	2	0	1	0	0	0	3
68	1	P	2	3	0	2	3	0	0	3	2	2	0	0	3	0	0	1	0	4
82	1	P	1	0	3	2	0	2	0	0	3	3	0	3	0	0	2	0	0	4
74	1	P	3	2	3	1	1	3	3	2	2	2	0	3	0	0	2	0	0	4
68	2	P	2	2	3				0	3	3	0	3	0	3	0	3	0	2	4
72	1	P	2	2	2	1	3	3	2	1	2	3	1	2	1	0	2	1	1	5
66	1	P	2	3	0	3	3	1	2	3	2				0	0	3	0	1	5
75	1	P	0	2	3	0	3	0	3	1	2	3				0	0	3	0	6
79	1	P							0	3	0	3	2	2	0	3	0	3	0	6
67	2	P	0	0	3	0	0	2	2	0	3	0	0	2	0	0	3	1	0	6
80	1	F	3	1	1	0	1	1	3	1	2	0	1	1	0	1	0	0	2	6
75	1	F	0	0	3	0	0	3	0	2	0	2	0	0	2	0	0	0	0	3
72	1	F	1	3	3				1	2	3	1	1	0	3	0	2	2	1	4
48	2	F	0	3	3				1	3	3	2	2	0	3	0	3	2	1	4
85	1	F	1	2	2				1	1	3	3	2	1	0	1	3	0	1	4
63	2	F	3	0	3	3	0	2	3	0	3	3	1	3	2	0	3	0	0	4
75	1	F	2	3	3	2	3	3	0	2	3	0	3	0	0	3	0	2	0	4
72	1	F	2	2	3	0	3	0	3	3	2	3	0	3	0	3	0	2	0	4
73	1	F	1	3	0	2	3	0	1	2	3	0	1	1	2	0	3	0	0	4
92	1	F	0	0	1	0	2	2	2	3	3	1	1	0	2	3	0	0	0	5
65	1	F	2	2	3	1	3	3	2	2	3	3	1	2	2	3	0	0	0	5
67	1	F	3	2	2				3	2	3	3	2	1	2	2	3	0	1	6
83	1	F	1	3	1	0	3	3	0	1	3	3	1	2	0	1	3	0	0	5
84	1	F	1	0	2	0			0	0	2	3	1	1	2	0	3	0	1	5
78	2	F	2	0	2	0	3	2	0	2	3	0	0	3	0	0	3	0	2	5
93	2	F	0	0	3	1	1	3	0	0	3	2	0	0	2	0	0	1	0	5
68	1	F	3	2	2	0	3	2	1	1	2	3	2	2	0	1	1	0	1	6
84	2	F	3	2	3	3	3	1	2	3	3	0	3	2	2	0	3	0	2	6
68	1	F	0	1	1	0	2	1	1	2	3	3	1	1	0	3	3	1	3	6
72	2	F	3	3	1	3	3	2	2	3	1	2	2	3	0	1	1	1	1	6
72	1	SL	2	2	2				3	1	3	3	2	1	2	1	3	1	0	4
76	1	SL	2	2	3				1	3	2	3	2	1	2	3	3	2	2	4
83	2	SL	2	3	3	0	0	3			2	0	2	0	2	3	0	3	0	4
70	1	SL	3	3	3	2	2	3			2	2	3						0	4
77	2	SL	2	3	2	3	3	2	2	3	2	2	0	3	0	0	3	1	0	4
83	1	SL	1	2	1	0	2	1	3	0	2	3	1	1	0	0	2	3	1	5
59	1	SL	1	2	3	0	0	3	0	0	3	2	2	0	1	3	3	0	3	5
71	2	SL	3	3	3	2			3	2	3	2	1	2	2	3	0	2	0	6
78	2	SL							3	0	3	0	3	2	0	3	0	3	0	6
76	2	SL	0	0	3	0	2	3			3	1	3	0	3	0	3	0	3	6
80	2	CBS	2	2	2	1	3	3	1	1	2	3	2	1	1	2	3	2	1	4
73	1	CBS																	0	4
72	1	CBS	2	2	2	1	3	2	1	2	2	3	2	1	0	2	3	1	1	5
69	2	CBS							0	3	2	2	1	1	3	3	1	2	1	5
71	2	CBS	3	3	3	0	3	3	2	3	3	3	2	1	2	3	1	2	1	5
82	1	CBS	3	2	3				2	1	3	3	2	1	1	3	2	1	1	5
65	1	CBS	3	3	3	0	0	3	0	3	3	2	3	0	0	3	0	3	0	5
72	1	CBS	3	2	3	3	3	0	0	3	3	1	3	0	0	3	0	2	3	5
78	2	CBS	0	3	2				0	1	1	3	3	1	0	1	1	0	0	6
90	1	PI	0	0	2	0	0	2	0	0	3	0	0	2	0	0	0			3
83	1	PI	1	0	3				0	2	3	1	0	2						3
74	1	PI	0	2	3	0	3	0	3	2	0								0	4
84	1	PI	0	2	3	2	2	3	0	0	3	0	0	3	0	3	0	0	0	4
71	2	PI	2	2	3	0	0	3	0	0	3	0	0	3	0	3	0	1	0	4
70	1	PI	3	3	3	2	3	3	0	3	0	3	1	0	2	2	3	0	2	5
65	1	PI																	1	5
77	1	PI	2	2	3	0	0	3	2	2	3	2	0	0	3	1	0	1	1	5
75	2	PI	2	2	3	3	2	2	3	2	3	0	0	3	0	3	0	2	1	5
76	1	PI	2	3	3	2	3	0	0	3	0	3	3	2	0	3	2	2	1	5
71	1	PI	2	0	3	0	0	3	0	2	3	0	0	3					1	5
72	1	PI	2	2	3	0	2	2	3	0	3	0	0	3	0	3	0	2	0	5
71	1	PI	0	2	3				0	0	3	0	0	3	0	3	1	3	1	5
75	2	PI	3	3	3	0	2	3	0	3	0	0	3	2	0	3	0	2	1	5
68	1	PI	2	2	3	2	0	2	0	3	0	2	0	0	1	1	0	2	0	6
78	2	PI	2	2	3	1	0	3	0	0	3	0	0	3	0	3	0	2	0	6
72	1	PI							2	2	3	0	0	3	0	2	0	2	0	6
66	1	PI							3	1	3	0	2	0	2	3	0	2	0	6
67	1	PI	3	3	3	1	0	3	0	3	0	3	2	0	3	0	3	0	2	6