Table S1 Experimental (d_{hkl}^{exp}) and refined (d_{hkl}^{cal}) lattice spacings of $SrTiO_3$ and relative deviation. The experimental datasets are based on measurements of angles ω (1) and angles 2θ (2).

Bragg Reflection			Evaluation using (1) (a = 3.905185 Å)			Evaluation using (2) (a = 3.905350 Å)		
h	k	l	d_{hkl}^{exp} (Å)	d_{hkl}^{cal} (Å)	$\lvert d_{hkl}^{exp} - d_{hkl}^{cal} \rvert / d_{hkl}^{exp}$	d_{hkl}^{exp} (Å)	d_{hkl}^{cal} (Å)	$\lvert d_{hkl}^{exp} - d_{hkl}^{cal} \rvert / d_{hkl}^{exp}$
0	0	1	3.90513	3.90519	1.41×10^{-5}	3.90558	3.90535	6.40×10^{-5}
0	0	2	1.95250	1.95259	4.74×10^{-5}	1.95269	1.95268	1.28×10^{-5}
0	0	3	1.30175	1.30173	1.67×10^{-5}	1.30179	1.30178	1.28×10^{-5}
0	0	4	0.97634	0.97630	4.48×10^{-5}	0.97634	0.97634	2.56×10^{-6}

Table S2 Experimental (d_{hkl}^{exp}) and refined (d_{hkl}^{cal}) lattice spacings of $DyScO_3$ and relative deviation. The experimental datasets are based on measurements of angles ω (1) and angles 2θ (2).

Bragg Reflection			Evaluation using (1) (a = 5.442441 Å, b = 5.719317 Å, c = 7.904240 Å)			Evaluation using (2) (a = 5.442393 Å, b = 5.719398 Å, c = 7.904408 Å)		
h	k	l	d_{hkl}^{exp} (Å)	d_{hkl}^{cal} (Å)	$\lvert d_{hkl}^{exp} - d_{hkl}^{cal}\rvert / d_{hkl}^{exp}$	d_{hkl}^{exp} (Å)	d_{hkl}^{cal} (Å)	$\lvert d_{hkl}^{exp} - d_{hkl}^{cal}\rvert / d_{hkl}^{exp}$
0	0	2	3.95165	3.95212	1.19×10^{-4}	3.95230	3.95220	2.35×10^{-5}
1	1	0	3.94242	3.94264	5.48×10^{-5}	3.94261	3.94264	8.81×10^{-6}
0	0	4	1.97602	1.97606	1.82×10^{-5}	1.97604	1.97610	3.24×10^{-5}
2	2	0	1.97126	1.97132	2.95×10^{-5}	1.97134	1.97132	8.95×10^{-6}
2	2	1	1.91277	1.91273	2.13×10^{-5}	1.91267	1.91273	3.42×10^{-5}
2	3	0	1.56134	1.56139	3.09×10^{-5}	1.56143	1.56140	2.00×10^{-5}
3	2	0	1.53185	1.53189	2.73×10^{-5}	1.53189	1.53189	9.81×10^{-7}
0	0	6	1.31737	1.31737	1.90×10^{-10}	1.31740	1.31740	2.15×10^{-6}
3	3	0	1.31419	1.31421	1.68×10^{-5}	1.31418	1.31421	2.66×10^{-5}
3	3	1	1.29642	1.29642	4.02×10^{-6}	1.29641	1.29642	6.36×10^{-6}
2	4	0	1.26577	1.26574	2.36×10^{-5}	1.26576	1.26575	6.39×10^{-6}
3	3	2	1.24707	1.24707	1.67×10^{-8}	1.24707	1.24708	4.04×10^{-6}
4	2	0	1.22863	1.22863	7.89×10^{-11}	1.22864	1.22862	1.27×10^{-5}
2	4	2	1.20542	1.20543	6.18×10^{-6}	1.20544	1.20544	1.35×10^{-8}
4	2	2	1.17325	1.17324	5.97×10^{-6}	1.17320	1.17324	3.44×10^{-5}
3	4	0	1.12297	1.12297	1.73×10^{-6}	1.12298	1.12297	5.21×10^{-6}
4	3	0	1.10748	1.10748	4.52×10^{-6}	1.10750	1.10748	1.46×10^{-5}
5	2	0	1.01729	1.01729	3.92×10^{-6}	1.01728	1.01728	1.12×10^{-9}
0	0	8	0.98805	0.98803	1.75×10^{-5}	0.98805	0.98805	2.21×10^{-9}
4	4	0	0.98567	0.98566	1.11×10^{-5}	0.98565	0.98566	1.13×10^{-5}
4	4	2	0.95637	0.95636	5.66×10^{-6}	0.95637	0.95637	2.39×10^{-6}
0	6	0	0.95326	0.95322	4.26×10^{-5}	0.95325	0.95323	1.78×10^{-5}
6	0	0	0.90708	0.90707	7.13×10^{-6}	0.90706	0.90707	6.08×10^{-6}
4	4	4	0.88202	0.88202	3.59×10^{-6}	0.88201	0.88203	2.09×10^{-5}

Table S3 Experimental (d_{hkl}^{exp}) and refined (d_{hkl}^{cal}) lattice spacings of $NdGaO_3$ and relative deviation. The experimental datasets are based on measurements of angles ω (1) and angles 2θ (2).

Bragg Reflection			Evaluation using (1) (a = 5.428440 Å, b = 5.498356 Å, c =7.708831 Å)			Evaluation using (2) (a = 5.428380 Å, b = 5.498458 Å, c = 7.708924 Å)		
h	k	l	d_{hkl}^{exp} (Å)	d_{hkl}^{cal} (Å)	$\lvert d_{hkl}^{exp} - d_{hkl}^{cal}\rvert / d_{hkl}^{exp}$	d_{hkl}^{exp} (Å)	d_{hkl}^{cal} (Å)	$\lvert d_{hkl}^{exp} - d_{hkl}^{cal}\rvert / d_{hkl}^{exp}$
0	0	2	3.85628	3.85442	4.83×10^{-4}	3.85618	3.85446	4.45×10^{-4}
2	2	0	1.93137	1.93148	5.92×10^{-5}	1.93148	1.93149	5.73×10^{-6}
0	0	4	1.92732	1.92721	5.69×10^{-5}	1.92742	1.92723	9.98×10^{-5}
2	2	1	1.87351	1.87357	3.21×10^{-5}	1.87349	1.87358	4.68×10^{-5}
3	2	0	1.51146	1.51147	3.93×10^{-6}	1.51140	1.51146	4.15×10^{-5}
2	3	0	1.51890	1.51892	1.55×10^{-5}	1.51894	1.51894	1.68×10^{-6}
3	3	0	1.28764	1.28765	1.26×10^{-5}	1.28767	1.28766	7.21×10^{-6}
0	0	6	1.28481	1.28481	2.62×10^{-9}	1.28482	1.28482	1.31×10^{-9}
3	3	1	1.27006	1.27006	2.42×10^{-9}	1.27004	1.27007	1.95×10^{-5}
2	4	0	1.22631	1.22630	1.24×10^{-5}	1.22631	1.22631	1.16×10^{-8}
4	2	0	1.21699	1.21692	6.15×10^{-5}	1.21698	1.21691	5.86×10^{-5}
2	4	2	1.16862	1.16858	3.63×10^{-5}	1.16857	1.16859	1.88×10^{-5}
3	4	0	1.09460	1.09458	2.26×10^{-5}	1.09460	1.09459	1.49×10^{-5}
4	3	0	1.09065	1.09066	9.45×10^{-6}	1.09063	1.09066	2.72×10^{-5}
4	4	0	0.96576	0.96574	1.85×10^{-5}	0.96576	0.96575	1.50×10^{-5}
0	0	8	0.96358	0.96360	1.92×10^{-5}	0.96359	9.63616	2.22×10^{-5}
4	4	2	0.93680	0.93679	1.59×10^{-5}	0.93679	0.93679	1.22×10^{-6}
0	6	0	0.91643	0.91639	4.07×10^{-5}	0.91643	0.91641	2.23×10^{-5}
6	0	0	0.90474	0.90474	1.79×10^{-8}	0.90473	0.90473	9.92×10^{-9}